EMERGING PROBLEMS IN PUBLIC HEALTH, NURSING AND SOCIAL WORK IN TROPICAL REGIONS

Visiting editors:

Beldjebel Irad (Beirut)
Eva Mitterpach (Nairobi)
Jaroslava Sokolova (Trnava)
Max Philippe (Port au Prince)
Dagmar Kalatova (Pribram)
Roberto Babela (Vienna)

CONTENT

BREASTFEEDING AND VITAMIN D IN COMPARISON WITH OCCURRENCE OF INFECTIOUS EVENTS AMONG HIV EXPOSED CHILDREN IN RURAL UGANDA
SUVADA J., NKONWA I. H., VERTUS C., TUMBU P. 7

ADHERENCE TO VISITING-COUNCELING AND TREATMENT AIDS-CENTER IN ELDORET (KENYA) RURAL COMMUNITY
Z. NAGY, L. GABRHELOVA, I. KMIT, B. KOLENOVA, Z. TULIPAN, J. SOKOLOVA, M. KIMON 9

LABORATORY DIAGNOSTIC DETERMINATION OF C-REACTIVE PROTEIN IN AIDS POPULATION IN ETHIOPIA
G. MIKOLASOVA, P. MIKOLASOVA, Z. GAZOVA, K. PAUEROVA, J. SOKOLOVA, J. HELESIC 10

HERPETIC COINFECTIONS IN CHILDREN WHIT AIDS INCREASES THE RISK OF IMMUNE RECONSTITUTION SYNDROME (IRS)
J. SOKOLOVA, J. VUJCIKOVA, A. AUGUSTINOVA, V. SLADECKOVA, I. BELDJEBEL, O. BOTEK, A. SHAHUM 11

IMPORTED CEREBRAL MALARIA WITH MULTI ORGAN FAILURE MOF IN EUROPEAN TRAVELLERS ACQUIRED DURING SHORT TRAVEL TO BENIN DESPITE CHEMOPROPHYLAXIS
B. SANIOVA, D. KRKOSKA, J. HUDECEK, P. KISAC, V. KRCMERY 13

SPECTRUM OF TROPICAL DISEASE AND SOCIAL BACKGROUND IN OUR LADY OF FATIMA CLINIC IN GORDIM, SUDAN DURING MALARIA SEASON 2010
B. SILHAROVA, E. CEPLOOVA, J. SOKOLOVA, C. MINANI 14

MRSA AND ESBL – PRODUCING ENTEROBACTERIACEAE COLONISATION DECREASED DURING HAART: 7 YEARS FOLLOW UP IN CHILDREN WITH AIDS FROM PHNOM PENH
A. SHAHUM, A. LISKOVA, J. VUJCIKOVA, I. BELDJEBEL, S. SECKOVA, J. BENCA, H. DUBOVSKA, A. KALAVSKA, J. SOKOLOVA, M. CHOMORUN, L. S. DUONG 18

HOMELLES FROM LOW SHELTER ARE NOT MORE FREQUENTED COLONIZED OR INFECTED WITH MULTIREZISTANT RESPIRATORY PATHOGENS THAN OVERALL POPULATION
M. BOSNAKOVA, A. MATEL, A. LISKOVA, R. KOVAC 19

THE INCIDENCE OF OPORTUNISTIC INFECTIONS IN HIV-1 INFECTED CAMBODIAN CHILDREN IN CORRELATION WITH CD4 CELL PERCENTAGE
J. VUJCIKOVA, E. KALAVSKY, H. DUBOVSKA, I. BELDJEBEL, J. BENCA, S. SECKOVA, J. SOKOLOVA, P. KISAC, A. AUGUSTINOVA, V. SLADECKOVA, A. SHAHUM 20

TEN YEARSURVEILANCE OF GEOHELMINTIC AND PROTOZOAS INFECTIONS AMONG OUTPATIENTS FROM MUKURU SLUM AREA IN NAIROBI
J. MULI, Z. KALAVSKA, E. DIANA, M. OTHIAMBO, V. SLADECKOVA, P. KISAC, M. KIMON, ... 21

NEWS IN HIV / AIDS: REPORT FROM HIV CONGRESS – VIENNA 2010
E. MITTERPACH, V. KRCMERY, I. KMIT, J. SUVADA, A. MATEL, C. VERTUS, M. PHILIPPE 22

MATERNAL AND NEONATAL / CHILDREN'S MORTALITY IN TROPIC
E. MITTERPACH, V. KRCMERY, G. MIKOLASOVA, H. KONOSOVA 26

REPORT FROM AIDS MEETING 2010 – NURSING, SOCIAL AND HEALTH ISSUES OF AIDS
J. BORDACOVA, G. MIKOLASOVA, P. MIKOLASOVA, Z. GAZOVA, M. CERVENKOVA, H. KONOSOVA 28

PUBLIC HEALTH NURSING AND SOCIAL ISSUES OF AIDS
M. CERVENKOVA, G. MIKOLASOVA J. BORDACOVA, A. KALAVSKA, I. KMIT, H. KONOSOVA 33

UPDATE IN HIV – NURSING AND SOCIAL PROBLEMS
M. CERVENKOVA, J. BORDACOVA, G. MIKOLASOVA, P. MIKOLASOVA, Z. GAZOVA, L. FIZIK, A. KALAVSKA, I. KMIT, H. KONOSOVA 37

PUBLIC HEALTH, NURSING, SOCIAL ECONOMIC AND ETHICAL ISSUES OF MRSA AND HEPATITIS REPORT FROM DITAN, BEJING – CHINA
J. SOKOLOVA, J. MEDVED 41

MALARIA UPDATE - HEALTH, SOCIAL NURSING AND ECONOMIC ASPECTS OF MALARIA IN ETHIOPIA AND SUBSAHARAN AFRICA AND SOUTHEAST ASIA. A TOP OF THE ICEBERG?
STANOVA, A., F., MIKOLASOVA, G., KMIT, I., BUGRI, S., D. TONZAR, H. KONOSOVA 45

EMERGING TUBERCULOSIS – HEALTH AND SOCIAL ASPECTS
KMIT, I., MIKOLASOVA, G., STANOVA, A., BUGRI, S., MATEL, A., TONZAR, D., H. KONOSOVA 52

NEWS IN MEDICAL, SOCIAL, NURSING AND HEALTH PROBLEMS OF AIDS
KMIT, I., MIKOLASOVA, G., STANOVA, A., BUGRI, S., TONZAR, D., H. KONOSOVA . 71

ANTIRETROVIRAL THERAPY FOR HIV INFECTION IN ADULTS AND ADOLESCENTS
RECOMMENDATIONS FOR PUBLIC HEALTH APPROACH 2010 REVISION, HIV/AIDS PROGRAMME, WHO
E. MITTERPACH 85

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF FUNGAL INFECTIONS – AN ICAAC UPDATE
P. MIKOLASOVA, M. CERVENKOVA, J. BORDACOVA, G. MIKOLASOVA, D. KALATOVA, E. KNOSKOVA, J. BOZIK, H. KONOSOVA 94

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF HIV – AN ICAAC UPDATE
BORDACOVA, J., CERVENKOVA, M., MIKOLASOVA, P., MIKOLASOVA,G., D. KALATOVA, KNOSKOVA, E., J. BOZIK, H. KONOSOVA 97

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF RESISTANCE TO ATB AN ICAAC UPDATE
M. CERVENKOVA, P. MIKOLASOVA, J. BORDACOVA, G. MIKOLASOVA, J. VALLOVA, D. KALATOVA, E. KNOSKOVA, J. BOZIK, H. KONOSOVA 101

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF TROPICAL – AN ICAAC UPDATE
D. KALATOVA, J. BORDACOVA, P. MIKOLASOVA, M. CERVENKOVA, G. MIKOLASOVA, J. VALLOVA, E. KNOSKOVA, J. BOZIK, H. KONOSOVA 104

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF NEW DRUGS, NEW ATB – AN ICAAC UPDATE
D. KALATOVA, MIKOLASOVA, P., CERVENKOVA, M., BORDACOVA, J., MIKOLASOVA, G., KNOSKOVA, E., J. BOZIK, H. KONOSOVA 107

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF TUBERCULOSIS – AN ICAAC UPDATE
P. MIKOLASOVA, M. CERVENKOVA, J. BORDACOVA, G. MIKOLASOVA, J. BOZIK 120

BURNING ISSUES ON INFECTION NURSING AND SOCIAL WORK (50 ICAAC – CONFERENCE REPORT/BOSTON 11-14.10.2010)
B. IRAD, A. STANOVA, J. SOKOLOVA, Z. TULIPAN, T. DOCI, V. KRCMERY, D. KALATOVA, E. MISIKOVA 126

NEW STRATEGIES AND NEW ANTIBIOTICS (ICAAC): EMERGING ISSUES ON NEW STRATEGIES IN HEALTH AND SOCIAL WORK
P. BUKOVINOVA, V. KRCMERY, J. MULI MUTUKU, D. KALATOVA, E. MISIKOVA 132

50TH ICAAC: BEST IN INFECTIOUS DISEASE: LITERATURE REVIEW 2010
ROBERT A. BONOMO 137

BURNING ISSUES IN SOCIAL WORK AND HEALTH ISSUES IN TROPIC
J. MULI MUTUKU, I. KMIT, J. SUVADA, G. MIKOLASOVA, J. BARTOSOVIC, M. MICHALCIK, J. BOZIK, L. VARKONOVA, M. PRASILOVA, Y. RAJAB, O. SHAKURFO, H. NYADISABA, L. BENSON, B. TIMONA ALUMBASHI, N. BUJDOVA, L. PICHONSKA, R. BABELA, B. IRAD, V. NOSKOVA, S. KOMPAS, P. SLAVIKOVA, N. DANISOVA, R. HOCHMAN, E. MISIKOVA, F. DOCI, Z. TULIPAN 142

ACINETOBACTER – VIRULENCE, RESISTANCE AND PATOGENICITY (Congress Report 1.- 4. 2010)
R. CAUDA, V. KRČMÉRY 145

LIFE IN NAIROBI SLUMS (KENYA)
BENSON ALUMBASI TIMONA 146

NEWS IN MALARIA HEALTH, SOCIAL AND NURSING DSTS FROM ASTMH MEETING
J. SOKOLOVA, M. BOSNAKOVA, I. KMIT, J. MUTUKU 149

EXCEPTA OF SOCIAL WORK AND HEALTH CARE PROBLEMES IN COMMUNICABLE DISEASES – TB, HIV AND VARIA
J. MULI MUTUKU, I. KMIT, J. SUVADA, G. MIKOLASOVA, J. BARTOSOVIC, M. MICHALCIK, J. BOZIK, L. VARKONOVA, M. PRASILOVA, Y. RAJAB, O. SHAKURFO, H. NYADISABA, L. BENSON, B. TIMONA ALUMBASHI, N. BUJDOVA, L. PICHONSKA, R. BABELA, B. IRAD, V. NOSKOVA, S. KOMPAS, P. SLAVIKOVA, N. DANISOVA, R. HOCHMAN, E. MISIKOVA, F. DOCI, Z. TULIPAN J. SOKOLOVA 181

ASTMH MEETING REPORT (2010)
V. KRCMERY, J. BENCA 195

BREASTFEEDING AND VITAMIN D IN COMPARISON WITH OCCURRENCE OF INFECTIOUS EVENTS AMONG HIV EXPOSED CHILDREN IN RURAL UGANDA

Suvada J., Nkonwa I. H., Vertus C., Tumbu P.

[1]*Clinic for Positive Living and Quality of Life, Hospital St. Charles Lwanga, Buikwe, Uganda*
[2]*International Tropical Institute, St. Elisabeth University, Bratislava, Slovak Republic*
[3]*Baylor College Medicine for Children HIV/AIDS, Kampala, Uganda*

Abstract: Incidence of infections diseasses and breastfeeding with co-administration use D-vitamin a HIV-positive patient population in Uganda is reported.

Objectives

Worldwide has been estimated 500 000 new infections due to the human immunodeficiency virus (HIV) occured in children, of which 90% were acquired through mother-to-child transmission (MTCT) of HIV. Of the these new infections, arround 360 000 were acquired during labour and in the pre-partum period.(1-6) Of the remaining new HIV infections, the majority were acquired during breastfeeding.

Methods

Presented study is prospective study with characteristics of quantitative and confirmative scientific approach. Tha major view forms formative research with focus of PMTCT programm and access to the feeding of HIV exposed children (HIV+/ HIV-)relating to occurrence of infectious diseases with contemporaneous administration of vitamin D in rural areas of Uganda.

Results

The research surveyed on the definition of spread feeding approaches and described local performance associated with choice of feeding and the purpose in view was associated with impact on breastfeeding, HIV status and administration of vitamin D supplementation and occurence of infectious event. Breastfeeding in whole group of HIV exposed children under 3 months is low and prevalence of infections is high. Analysis by the event of diarrhoea or pneumonia among HIV exposed children relating to breastfeeding and administration of vitamin D showed significant correlation in occurrence of diarrhoea among HIV positive children 59% vs. 30,43% among HIV negative group (p = 0,0253). All the factors: absence of HIV infection, breastfeeding and administration of vitamin D, were associated with statistical significant decreasing of infectious event (p < 0,0001). These findings were observed even in HIV positive children group with significance level p < 0,0001. Analysis of the presence of events of occurence any of infections (diarrhoea or pneumonia) in HIV infected children's group depending of breasfeeding and administering of vitamin D (daily) was at the significance level p = 0,0002. (We will present current data here).

Conclusion

In this study was find significant impact upon infection presentation when using daily vitamin D supplementation in both children HIV negative even HIV positive. We suppose that these observation can be important for futher research among HIV infected children with focusing on deeper understanding of action of vitamin D and HIV(7-13) infection in consideration of prevention of infectious events among children living with HIV.

References:
1. Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Matel, A.,Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88.

ADHERENCE TO VISITING-COUNCELING AND TREATMENT AIDS-CENTER IN ELDORET (KENYA) RURAL COMMUNITY

Z. Nagy, L. Gabrhelova, I. Kmit, B. Kolenova, Z. Tulipan, J. Sokolova, M. Kimon,

St. Lesley Batthyanny-Strattmann VCT and Clinic Eldoret, Kenya
School of Health Care and Social Work, Trnava University, Trnava, Slovak Republic
SEU Tropical Programe Eldoret Kenya

Abstract: Adherence to highly active antiretrovital therapy (HAART) is an important factor in assess of antiretrovital management of HIV positive patients in rural AAfrican (1-9).

Objectives
Objective of the sheed was to assess compliance and adherence to VCT in rural African settings – from the diagnosis – trough referral to AIDS treatment centre – to DOT/DAART in 2006-2010, in Eldoret Kenya, in a setting with 20-45% prevalence of AIDS.

Methods
Follow up of each patients who was diagnosed on St. Lesley Strattmann Community clinic, who positive test was confirmed, was assessed, in those patients, who were sent to either governmental therapy center (AMPATH) or to own VCT Tropical Programe.

Results
21 499 patients has been seen by our doctors within 5/2005 – 5/2010 (5 years) and 611 had an opportunistic superinfection (RTI 33,5%, syphilis 23,7%, pneumonia 17,9%, skin lesion 14,68%, fewer only 13,88%, HZV 13,47%, diarhoea 11,2% etc.). Of 611 patients, 245 patients were HIV positive (40,1%) and due to low CD4 counts or grade IV. WHO disease. 162 of 611 patients were refereed to recive HAART. However only 61 of them (37,6%) came for) follow up visit to AMDATH, and only 49 confirmed to use HAART during owe year of follow up.

Conclusion
Adherence to VCT/HAART program in Eldoret Rural Community Clinic and VCT is very low – despite of high HIV seroprevalence in this area (40,1% among tested patients). Only 49 of 245 HIV positive patients participated on follow up on treatment visits (DAART), what is about 20%. Education plus intensive VTC strategy should be introduced in this settings of high HIV prevalence.

Key words: HIV, AIDS, Kenya

References:
1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Matel, A., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57.

LABORATORY DIAGNOSTIC DETERMINATION OF C-REACTIVE PROTEIN IN AIDS POPULATION IN ETHIOPIA

G. Mikolasova, P. Mikolasova, Z. Gazova, K. Pauerova, J. Sokolova, J. Helesic

Kibre Mengist, SEU Trop. Programme Ethiopia

Abstract: Results of C-reactive protein screening in rural Ethiopian hospital was analyzed.

Objectives

The objectives of this study was to analyze the introduction of CRP testing as an important indicator of bacterial infection in the diagnostic of inflammation, for monitoring the effectiveness of antibiotic treatment(1-9) and the significance of this investigation in terms of Ethiopia.
The aim of the sheeds was to extend the basic laboratory in Kibre Mengist (Ethiopia) together with assessment of clinical outcome and correlation with test results provided the diagnosis only on the basis of clinical signs of disease.

Patient and Methods

The diagnostic of hospitalized patients and outpatients with AIDS in a hospital in Kibre Mengist based on clinical signs of disease, using RDT and quantitative determination of the value of CRP marker. The data, were mutually compared and statistical analyses were carried out using SPSS software.

Results

The results fin 2966 patients show that it is important first to obtain the consent to use RDT for screening and than to accelerate reliable diagnostic and the treatment itself by determining CRP with RDT. The introduction of CRP examination, especially in case of patients with ambiguous clinical picture of particular bacterial infections disease and especially where it is not possible to wait for the typical clinical signs, e.g. in infants and HIV/AIDS patients is continuing to diagnesis of bacterial vs vival infections.

Conclusions

Although the clinical diagnostic is cheap, wrong diagnosis leads to unnecessary prescriptions,(10-13) which supports the growth of resistance to antimicrobial drugs in the developing countries and increases the cost of a new, effective treatment with move expressive 2-nd line antibiotics (e.g. quinolens, oral 2-3 gen. cephalosporins)

Key words: Rapid diagnostics tests, C-reactive protein, infection, diagnostic, treatment.

References:

1. Alio, A.: Lancet. 2010, 373, 2562-63. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Matel, A., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, f., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. – **13.** WHO report, 2008 Geneva 2009, www.who.org.

HERPETIC COINFECTIONS IN CHILDREN WHIT AIDS INCREASES THE RISK OF IMMUNE RECONSTITUTION SYNDROME (IRS)

J. Sokolova, J. Vujcikova, A. Augustinova, V. Sladeckova, I. Beldjebel, O. Botek, A. Shahum

School of Health Care and Social Work, Trnava University, Trnava, Slovak Republic
St. Maximilian Kolbe Tropical Clinic of Infectious Diseases SEU, Phnom Penh, Cambodia
St. Elizabeth University College, Bratislava, Slovak Republic

Abstract: Herpetic Infections are human to be commonest opportunistic infections among AIDS patients. Herpetic infections, mainly H. Zoster and Varicella in 77 HIV positive children with imune resustitution syndrome are unspected.

Objectives

The aim of this study is to asses herpetic coinfection whit herpes zoster-varicella and herpes simplex infection in Cambodian children whith AIDS in terms of risk factors and outcome.

Patients and Methods

Two groups of children whit AIDS were analyzed whit univariante analysis. Chí-square test and t-test whit Yates corection whit EPI INFO CDC 2008 statistic softwere package and with the open source statistical package. Of 77 children whit AIDS 48 had herpes coinfection (7 herpes simplex, 17 herpes zoster, 28 chickenpox). Herpes (HZV or herpessimplex)coinfection was not observed in 29 children on ART.

Results and discussion

Immune reconstruction syndrome (IRS) (P = 0,003), CD4 count less than 200 (P = 0,02) and otitis media (P = 0,05) were significant more frequently observed among herpes-coinfected AIDS children.

Conclusion

If herpetic infections in HIV positive children during HAART occur, in those children who are of increasing risk and develop IRS, otitis media and adverse outcome during ART are move common. Therefore vaccination against varicella and prophylaxis use of antivirals(eg. Acyklovir) in close children with contacts with herpes infected individuals is advisable.

References

1. I. Beldjebel, J. Vujcíková, J. Sokolová, V. Krčméry: Predictors of treatment failure in Cambodian children with human immunodeficiency virus infection. The Pediatric Infectioun Disease Journal, Volume 29, Number 6, June 2010, pp. 580-581. – **2.** I. Beldjebel, V. Krcmery, J. Vujcikova, J.Benca, M. Utesena, V. Noskova, J. Sokolova, J. Chomroun, Ch. Shahum, L. Rabarova, P. Slavikova: Genotypic and phenotypic resistance to reverse transcriptase inhibitors among 102 Cambodian children with AIDS treated with HAART. In: Clinical Microbiology and Infection : Abstracts of the 20th ECCMID, Vienna, Austria, 10-13 April 2010. - ISSN 1198-743X. - Volume 16 Issue s2 (2010), Pages S330. - **3.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57

Factors	Herpes-HIV coinfected children 48	Non herpes-HIV coinfected children 29	All children 77	P-value	OR	CI
Age (average)	11,7 (6-21)	11 (3-16)	11,43 (median 11)	NS	-	-
Male	31	17	48	0,8	1,3	0,45-3,69
Female	17	12	29	0,8	0,78	0,27-2,22
Duration of HAART treatment (month, average)	58 (24-84)	55 (24-84)	57 (24 – 84)	NS	-	-
No. of CD_4 cells (average)	192	394	316	0,07	-	-
< 100	7	10	35	0,08	0,32	0,09-1,11
101 - 200	8	-	6	0,02	-	-
201 >	25	19	36	0,4	0,57	0,2-1,64
Immune category 1	2	3	5	0,4	0,38	0,04-3,04
Immune category 2	11	4	15	0,5	1,86	0,47-7,88
Immune category 3	35	22	57	0,2	2,08	0,77-5,64
CDC category A	23	14	36	0,8	0,1	0,35-6,39
CDC category B	9	4	14	0,76	1,44	0,35-6,39
CDC category C	16	11	27	0,5	0,64	0,21-1,92
Pneumonia	34	17	51	0,4	1,7	0,59-5,04
Diarrohea	8	8	18	0,4	0,52	0,15-1,82
Oropharyngeal candidiasis	15	7	22	0,7	1,36	0,43-4,25
Otitis media	32	12	44	**0,05**	2,83	0,99-8,24
Immune reconstitution syndrome (IRS)	22	3	25	**0,003**	7,33	1,76-35,22
TBC	29	15	44	0,6	1,42	0,51-4,01
First line treatment (3TC+ddI+Nevirapin or Efavirenz)	43	26	69	0,7	1	0,17-5,36
Second line treatment	5	3	8	1	1,01	0,19-5,89
Death	-	3	3	0,05	0	0-1,32

IMPORTED CEREBRAL MALARIA WITH MULTI ORGAN FAILURE MOF IN EUROPEAN TRAVELLERS ACQUIRED DURING SHORT TRAVEL TO BENIN DESPITE CHEMOPROPHYLAXIS

J. Saniova, D. Krkoska, J. Hudecek, P. Kisac, V. Krcmery

Slovak Tropical Institute, Department of Intensive Medicine MFN
Jessenius Med School, Martin - Slovakia

Abstract: Case series of 4 patients after stat travel Benin with imported cerebral mallaria despite chemoprophylaxis with mefoquine reported.

Objectives

Cerebral malaria is associated with 20 – 30% mortality in aduts and 10 – 20% in children, however it is rarely imported during foreign travel (1-2). Aim of this communication is an overview of imported cerebral malaria in 4 cases related to short travel.

Patients and Methods

Four (4) patients with cerebral malaria and multiorgan failure are reviewed, hospitalised after returning for short travel in Benin after receiving Mefloquine prophylaxis before and during the trip.

Results

All 4 patients received Mefloquine prophylaxis and used ITN during camping in free nature in Benin for 1 – 2 weeks, the rest 1 week of the stay spending in Hotel.

Despite of prophylaxis before, during but not after travel and 4 presented cerebral malaria with coma, multiorgan failure including dialysis and liver haemoperfusion, cardiostimulation,base excess < 10. All treated with Quinine plus Actesunate and all 4 survived after 10 – 28 days of intensive therapy in ICU.

Conclusion

Mefloquine does not necessarily presents severe malaria in hyperendemic areas in nonimmune travellers especially in malaria peak season.

References

1. Gabrhelova L., Augustinova A., Olejcakova P. Higtslands malaria in Eldoret. J.Trop., PHSW, Vol. 5, 2009, 2-3, p. 11. – **2.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57

Table: **Overview of 4 patients whit cerebral malaria acquired in Benin**

Number of patients	Coma	Liver failure	Renal failure	Base excess	Hypoglycaemia	Anemia	Ventilation support
1	6d	No	Yes - 4d	11	2,3	>92g/l	3d
2	14d	Yes	Yes - 9d	14	3,1	>110 g/l	7d
3	22d	Yes	Yes - 11d	12	2,9	>99 g/l	10d
4	18d	Yes	Yes - 20d	10	2,2	>85 g/l	14d

SPECTRUM OF TROPICAL DISEASE AND SOCIAL BACKGROUND IN OUR LADY OF FATIMA CLINIC IN GORDIM, SUDAN DURING MALARIA SEASON 2010

B. Silharova, E. Ceploova, J. Sokolova, C. Minani

SEU Project AAA, DOR, SEU, Gordim, Sudan
St. Elizabeth University College, Bratislava, Slovak Republic
School of Health Care and Social Work, Trnava University, Trnava, Slovak Medical University, Slovak Republic
SEU Univ Programmes Soouth Sudan

Aim of the study

Spectrum of tropical diseases during malaria season (June-August) 2010 has been described in an open study.

Introduction

Majority of admissions represented respiratory tract infections (21%), malaria (15%), STD (7%), Spectrum of tropical diseases should rare according to rainy seaseon in malaria hyperendemic regions of Sub-Saharan Africa substainlly.(1-6) The aim of this stat communication was to describe incidence of common tropical diseases during malaria (rainy) season in a hyperendemic area of South Sudan.

Patients and Methods

Number of admissions varied from 1211 to 1499 pre month and major disease were RTI (pneumonia and URTI) – 22-31%, malaria - 22-28% uncomplicated, (complicated cases reported only 1,5 – 2,5 % of malaria cases). STD/UTI – 8-12 %, tuberculosis – 2-5% (new cases), anemia with positive stool slides for parasites (geohelmintiasis) – 8-10 %. Diarrhorea was relatively rare 4-8 % of all admission and/or visiters. All togheter 3979 OPD visits/patients have been seen within 3 months of rainy season in rural Sudanese community of Gordim (60-70 per day) by the two doctors (permanent staff) in june-august 2010.

Conclusion

Previous studies shoved 50-60% of all cases during malaria season in hyperendemic malaria region are due to uncomplicated and 5-10 % due to complicated malaria. We have observed much less (20-30%) malaria and only exceptionally severe (cerebral) malaria (9 cases in months) within our admissions. This may be due increase usage of artemisin and intermittent preventive treatment routinely admitted to all children and pregnant women since 2007 in this area(7-14).

References:

1. Filippi, V.: Lancet 2010, 375, 1999-2001. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Matel, A., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. – **14.** WHO Malaria reports 2007, 2008, WHO Geneva, www.who/malaria-annualreports/org.

	Morbidity - june/2010								
	< 1yr		1yrs to 4		5yrs to 14		over 15yrs		
Diseases/ Condition	Male	Female	Male	Female	Male	Female	Male	Female	Total
Malaria uncomplicated-unconfirmed	28	22	42	38	42	28	45	78	**323**
Malaria uncomplicated-confirmed	0	1	2	0	0	0	1	0	**4**
Complicated malaria - referred	0	0	0	0	0	0	0	0	**0**
Malaria treatment failure-referred	0	0	0	0	0	0	0	0	**0**
Fever of unknown origin	0	0	0	0	0	0	7	8	**15**
Acute Watery Diarrhoea	0	0	1	3	0	0	11	5	**20**
Diarrhoea with Blood	0	0	1	0	3	0	15	18	**37**
Pneumonia751210250243									
Other Respiratory Infection	34	41	54	52	22	12	34	11	**260**
Eye Diseases	0	1	2	1	2	2	10	13	**31**
Skin Diseases	3	2	15	10	6	5	26	21	**88**
STDs/Genito-Urinary Infections	0	0	0	2	0		012	15	**29**
Malnutrition	1	0	2	0	0	1	0	0	**4**
Anaemia	1	0	5	0	0	0	3	9	**18**
Intestinal Parasites	3	5	27	28	13	18	16	28	**138**
Trauma (Wounds,burns)	0	0	1	0	3	5	5	4	**18**
Trauma (landmines, UXO)	0	0	0	0	0	0	0	0	**0**
Measles	0	0	0	0	0	0	0	0	**0**
Polio	0	0	0	0	0	0	0	0	**0**
Tetanus	0	0	0	0	0	0	0	0	**0**
Meningitis	0	0	0	0	0	0	0	0	**0**
Whooping cough	2	3	1	0	0	0	0	0	**6**
Tuberculosis	0	0	1	0	1	0	7	14	**23**
Cholera	0	0	0	0	0	0	0	0	**0**
Suspected Relapsing Fever	0	0	0	0	0	0	0	0	**0**
Acute jaundice	0	0	0	0	1	0	0	0	**1**
Others	6	7	12	22	8	13	29	56	**153**
TOTAL	**85**	**87**	**178**	**166**	**103**	**89**	**221**	**282**	**1211**

	Morbidity - july/2010								
	< 1yr		1yrs to 4		5yrs to 14		over 15yrs		
Diseases/ Condition	Male	Female	Male	Female	Male	Female	Male	Female	Total
Malaria uncomplicated-unconfirmed	9	7	15	25	8	7	42	69	**182**
Malaria uncomplicated-confirmed	1	0	0	0	1	0	0	2	**4**
Complicated malaria - referred	0	0	0	0	0	0	0	0	**0**
Malaria treatment failure-referred	0	0	0	0	0	0	0	0	**0**
Fever of unknown origin	0	1	0	0	3	0	1	0	**5**
Acute Watery Diarrhoea	13	8	23	16	1	6	5	14	**86**
Diarrhoea with Blood	2	1	6	6	3	1	6	7	**32**
Pneumonia	4	3	2	10	3	3	5	2	**32**
Other Respiratory Infection	32	41	36	42	26	12	24	47	**260**
Eye Diseases	3	1	4	6	1	1	1	9	**26**
Skin Diseases	4	12	6	9	4	8	18	31	**92**
STDs/Genito-Urinary Infections	2	9	6	7	7	2	19	51	**103**
Malnutrition	2	0	2	1	6	5	6	8	**30**
Anaemia	1	0	3	1	0	0	4	2	**11**
Intestinal Parasites	2	3	21	16	6	8	16	24	**96**
Trauma (Wounds,burns)	0	1	2	1	6	1	6	4	**21**
Trauma (landmines, UXO)	0	0	0	0	0	0	0	0	**0**
Measles	0	0	0	0	0	0	0	0	**0**
Polio	0	0	0	0	0	0	0	0	**0**
Tetanus	0	0	0	0	0	0	0	0	**0**
Meningitis	0	0	0	0	0	0	0	0	**0**
Whooping cough	3	1	0	0	0	2	0	0	**6**
Tuberculosis	0	0	3	2	1	0	16	11	**33**
Cholera	0	0	0	0	0	0	0	0	**0**
Suspected Relapsing Fever	0	0	0	0	0	0	0	0	**0**
Acute jaundice	0	0	0	0	1	0	0	0	**1**
Others	7	12	16	24	18	17	82	71	**247**
TOTAL	**85**	**100**	**145**	**166**	**95**	**73**	**251**	**352**	**1267**

	Morbidity - august/2010								
	< 1yr		1yrs to 4		5yrs to 14		over 15yrs		
Diseases/ Condition	Male	Female	Male	Female	Male	Female	Male	Female	Total
Malaria uncomplicated-unconfirmed	26	20	57	52	20	30	88	36	**329**
Malaria uncomplicated-confirmed	0	0	1	0	2	1	0	1	**5**
Complicated malaria - referred	0	0	0	0	0	0	0	0	**0**
Malaria treatment failure-referred	0	0	0	0	0	0	0	0	**0**
Fever of unknown origin	2	1	0	0	2	1	0	2	**8**
Acute Watery Diarrhoea	3	4	5	6	6	8	2	3	**37**
Diarrhoea with Blood	0	2	4	7	2	3	7	8	**33**
Pneumonia81276541043									
Other Respiratory Infection	33	38	58	69	26	23	23	8	**278**
Eye Diseases	1	2	4	5	1	2	9	7	**31**
Skin Diseases	14	7	6	9	11	6	20	16	**89**
STDs/Genito-Urinary Infections	8	5	8	4	8	6	23	48	**110**
Malnutrition	3	1	6	2	2	3	1	0	**18**
Anaemia	1	2	1	3	1	1	2	5	**16**
Intestinal Parasites	4	3	16	21	25	18	23	20	**130**
Trauma (Wounds,burns)	0	1	1	2	4	3	5	4	**20**
Trauma (landmines, UXO)	0	0	0	0	0	0	0	0	**0**
Measles	0	0	0	0	0	0	0	0	**0**
Polio	0	0	0	0	0	0	0	0	**0**
Tetanus	0	0	0	0	0	0	0	0	**0**
Meningitis	0	0	0	0	0	0	0	0	**0**
Whooping cough	1	0	0	1	0	0	0	0	**2**
Tuberculosis	0	0	1	1	2	1	10	11	**26**
Cholera	0	0	0	0	0	0	0	0	**0**
Suspected Relapsing Fever	0	0	0	0	0	0	0	0	**0**
Acute jaundice	0	0	0	0	1	0	0	0	**1**
Others	14	16	32	30	25	28	92	86	**323**
TOTAL	**118**	**114**	**207**	**218**	**143**	**138**	**306**	**255**	**1499**

MRSA AND ESBL – PRODUCING ENTEROBACTERIACEAE COLONISATION DECREASED DURING HAART: 7 YEARS FOLLOW UP IN CHILDREN WITH AIDS FROM PHNOM PENH

A. Shahum, V. Krcmery, A. Liskova, J. Vujcikova, I. Beldjebel, S. Seckova, J. Benca, H. Dubovska, A. Kalavska, J. Sokolova, M. Chomorun, L. S. Duong

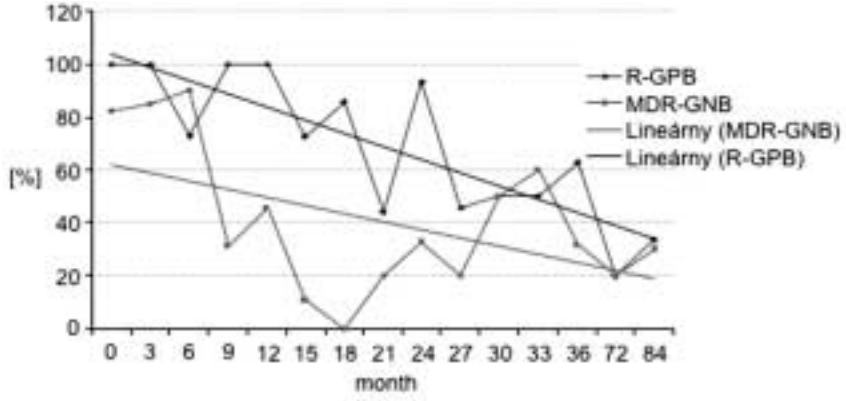
St. Maximilian Kolbe House of Hope, SEU Tropical Programme, Phnom Penh, Cambodia
St. Elizabeth University of Health and Social Sciences, Bratislava, Slovakia
School of Health Care and Social Work, Trnava University, Trnava, Slovakia

Objectives
To assess prevalence of resistant gram-positive organisms (MRSA, PRP) and multiresistant gram-negative bacteria (ESBL-producing Klebsiella, Serratia, Enterobacter), MDR-(Acinetobacter, Pseudomonas aeruginosa) among respiratory isolates(1-2) from 49 Cambodian children with AIDS within 7 years follow up.

Patients and Methods
116 children with AIDS on HAART were screened every 6 month within 7 years for respiratory isolates of drug-resistant bacteria with tonsillar and nose swabs.

Results
Of 49 children 408 isolates were detected and tested for antibiotic resistance in National Resistance laboratory for ATB resistance 206 gram-positive and 202 gram-negative: MRSA 47%, PRP 14%, ERY-R S. pyogenes 8%, ESBL Klepsiella spp. 10,5 %, ESBL plus Enterobacteriaceae spp., MDR-R Pseudomonas aeruginosa 10 %, MDR-R Acinetobacter baumani 8%. The proportion of MDR-R and MRSA decreased from 82% at the baseline to 33% after 7 years of HAART.

Conclusion
HAART improve the immune response increasing the CD_4 absolute count(3-14) and clearance of multiresistant GNB and MRSA from respiratory tract of Cambodian children. ATB resistance during the 7 years follow up decreased despite the amount antibiotics for the treatment of opportunistic infections increased.



References:
1. Bhuta, ZA: Lancet 2010, 375, 2032. . – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Matel, A.,Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88 – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. – **14.** WHO Malaria reports 2007, 2008, WHO Geneva, www.who/malaria-annualreports/org.

HOMELESS FROM LOW LIMIT SHELTER ARE NOT MORE FREQUENTED COLONIZED OR INFECTED WITH MULTIREZISTANT RESPIRATORY PATHOGENS THAN OVERALL POPULATION

M. Bosnakova, A. Matel, A. Liskova, R. Kovac and V. Krcmery

SEUC St Vincent de Paul Shelter and Mea Culpa, Bratislava

Objectives

Infection disease among homeless in shelters are of increasing importance, mainly during influenza season (nov-march). Shelters are also common source of MDR-Tuberculosis.(1-6) The aim of this study were to assess etiology and resistance pathogens of respiratory isolates from homeless population in low limit shelters in Bratislava Slovakia.

Patients and Methods

Within 2 shelters from homeless in Bratislava (5200 population) we have obtained physician status/sputum from 106 homeless to transport medium. Isolates were tested to common antibiotics in National Reference Laboratory on Antibiotics Resistance in Nitra.

Results and discussion

Of 104 cases, 42 have had positive status for pathogens:

* 21 *S. aureus* (Methicilin susceptible)
* 13 *C. albicans*
* 3 *St. pneumoniae* (PEN susceptible)
* 2 *S. pyogens* (ERY susceptible)
* 1 MRSA, *K. pneumoniae, E. cloacae,* 1. *E. coli*

Only one MRSA and no PR Pneumococci or ERY-R *S. pyogenes* or AMP-R H. influenzae has been isolated. After 6 week all samples were negative for TB. Only 2 of 106 patients have had respiratory symptoms, pharyngititis, both whit negative cultures.

Conclusion

We have done a similar study 5 years ago, in 44 beds shelter Mea Calupa and other shelters(7-15) with negative TB cultures dead only 1 positive case colonized with PRP. Both studies did not confirm that shelters from homeless are sources of resistant respiratory pathogens for the community.

Table: **Spectrum of Respiratory isolates from homeless people from shelters in Bratislava**

Pathogen	Number of isolates
MSSA	21
MRSA	1
PEN-S *St. pneumoniae*	3
ERY-S *S. pyogens*	2
K. pneumoniae	1
E. coli	1
Ent. cloaceae	1
C. albicans	13
All isolates	**43 (from 104 samples)**

References:

1. Cauda, R.: TB inomelles in Rome. Abstracts:Travel medicine. 2009.p34. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, f., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. – **14.** Bosnakova, M., et all.: Infectious diseases in homeless shelters. Acta chemoth.. 2005.15.37. – **15.** Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88.

THE INCIDENCE OF OPPORTUNISTIC INFECTIONS IN HIV-1 INFECTED CAMBODIAN CHILDREN IN CORRELATION WITH CD4 CELL PERCENTAGE

J. Vujcikova, E. Kalavsky, H. Dubovska, I. Beldjebel, J.Benca, S. Seckova, J. Sokolova, P. Kisac, A. Augustinova, V. Sladeckova, A. Shahum

St. Maximilian Kolbe House of Hope, SEU Tropical Programme, Phnom Penh, Cambodia
St. Elizabeth University of Health and Social Sciences, Bratislava, Slovakia
School of Health Care and Social Work, Trnava University, Trnava, Slovakia
Norwalk Teaching Hospital, Yale University School of Medicine, Norwalk, CT, USA

Objectives

The aim of the study was to compare the incidence of 12 targeted opportunistic infections (OI) occurring with association with CD4 cell percentages in Cambodia, country with limited resources.

Patients and Methods

In case of 66 children on first line of HAART we compared the occurrence of OI and the duration of HAART use. For each of events, we calculated the incidence rate, 95% confidence interval per 100 person-years. Categorical variables were tested with Chí square test and independent t- test.

Results

The median of age of children at the presentation was 6,75 years. Average CD4 cell percentage at the presentation was 10,6% (median 8%, IQR 1,67- 16,85), 67% of children had severe immunosuppression(CD4 < 15%). Severe malnutrition was diagnosed in 23% of children. The most common first time infections in the group with CD4 < 15% were pneumonia, pulmonary TB, fungal skin infections and oropharyngeal candidiasis. The frequency of OI and other infections generally showed statistically significant decreasing trends with increasing CD4%. The incidence of pneumonia, otitis media and dermatophyte infections remained still high in contrast to candidiasis, which correlated with low CD4%. Similarly correlated the occurrence of herpes zoster, but still kept to be present in the group with CD4>25%. We did not observe infections as PCP, MAC, CMV, toxoplasmosis or cryptococcosis in own group of 66 cambodian children with HIV in Phompenh.

Conclusion

The high incidence of OI and other infections in the group of children with low CD4% is comparable with other studies.(1-3) We found HAART effective for HIV infected children despite the initiation of the treatment in the advanced stage of the disease, only 3 children di

References:

1. Abstracts. 15th AIDS Congress, Vienna 12 – 18.7.2010 Vienna, International AIDS Society 2010, 1599pp. – **2.** Abstracts 20th ECCMID, Vienna 1 – 4.4.2010 Vienna, CMI Supll 1, Clin Microbiol Infection,Vol. 20, N=S1, 1336pp. – **3.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57

TEN YEAR SURVEILLANCE OF GEOHELMINTIC AND PROTOZOAS INFECTIONS AMONG OUTPATIENTS FROM MUKURU SLUM AREA IN NAIROBI

J. Muli, Z. Kalavska, E. Diana, M. Othiambo, V. Sladeckova, P. Kisac, M. Kimon

Mary Immaculate Center, Nairobi, Kenya
SEUC Programme in Kenya

Objectives

Helmintic infections are resposible to anaemia and malnutrition in must developing countries(1-5). The aim of this study is analyse parasitic infections due to geohelmints and intestinal protozoa among slums population of Mukuru Slum Nairobi, in 2001-2010.

Patients and methods

Within last 10 years (2000 – 2010) all together 139244 stool samples of 97 344 patients were examined because of clinical presentation of diarrhoea.

Results

Of 139244 stool samples, 131411 were positive either for ova of helmints (trichuriasis, ascaridiasis, Schistosoma hematobium, Ankylostoma duodenale, Taeniarhynchus saginatus, Strongyloides stercoralis) and 19 996 for cysts of Amoeba spp. or Giardia spp.
For treatment, albendazol SD or praziquantel have been used.

Conclusion

Ova of Ascaris, Trichuris and Ancylostoma spp. were focud in stool in 80% and cysts of Giardia spp. and Amoeba spp., in 15% all episodes of diarrhoea in OPD in Mukuru Nairobi.

References:
1. Abstracts. 15th AIDS Congress, Vienna 12 – 18.7.2010 Vienna, International AIDS Society 2010, 1599pp. – **2.** Abstracts 20th ECCMID, Vienna 1 – 4.4.2010 Vienna, CMI Supll 1, Clin Microbiol Infection,Vol. 20, N=S1, 1336pp. – **3.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **4.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **5.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57

NEWS IN HIV / AIDS: REPORT FROM HIV CONGRESS – VIENNA 2010

E. Mitterpach, V. Krcmery, I. Kmit, J. Suvada, A. Matel, C. Vertus, M. Philippe

Kenyan St Elizabeth Univ Trop Programme in Nairobi

Abstract: Most important papers and abstracts were rewiewed – invited lectures are summarized in this and 255 abstracts in second review.(1-15)

A. Prophylaxis of HIV

1. Treatment as prevention (TAP) – Switzerland, RSA, serum discoudant couples
2. Test and treat (TAT) – WHO strategy > 200, >350
   Protherm... of Trials: harm vs. benefit (PMCT)
   Barcelona "3 by 5" WHO strategy 2004
   Durban 2002 – universal access to ARV (TRIPS strategy – generics: India, Thailand, Brazil, China)
   Vancouver – PMCT 1998
   Mexico - PMCT 2008 – Pediatric HAART
3. HAART
   Main advantages of HAART
   1. Decrease of mortality – 4x
   2. Decreased number of opportunistic infections
   3. Decreased transmission
   4. Increased social/work attendance / economics
   5. Decreases TB
      - Laboratory monitoring – Test and Treat (TAT) (CIPRA study – Lancet 2010, Nurse vs Doctor)
      - First line ART – include TB + pregnant
        – WHO 2010 guidelines, case AE
        – Bond of NNRTI
        – d4T withdrawal (AZT, TDF preference)
      - Second line – NRTI – not may be helpful, but PI – boosted approach
      - Vaccine? Use of darunavir? raltegravir?

B. TB + HIV

1) Risks of TB – poverty/malnutrition/HIV (Kenya)
2) When to start TB therapy – we do not have enough time, disease is very rapid
3) Patients on HAART have better TB outcomes (adherence)
4) Reduced delay to ART (20 to 40 days)
   Survival after 8 weeks: 84% in WHO guidelines
   68% in standard patients
   OR 2,5
5) Mobile clinics TB specimen collection – 60% reduction of TB in HIV uninfected ad 22% in HIV
6) INH preventive therapy – first must exclude active TB – standardized screening – cough, fever, sweats, weigh loss, sensitivity 79%, specificity 56%, 65% reduction with 36 vs 6 months of IPT

7) Increasing maternal ventillation, UV lights
   • TB + HIV in high TB setting (K. de Coek, CDC), from DOTS to stop TB strategy
   Trial of 6 to 36 months of INH preventive therapy in Botswana.
   Conclusion: - if you kill 1 patient you loose your license
   - if you kill 10 – you go to jail (prison)
   - if you kill 100 – you go to psychiatry
   - if you kill 1000 – you go to political exile

C. Vitamin D deficiency

HIV (also with cancers, osteoporosis, hypertension, headaches)
- inadequate vitamin D store, colon, breast cancer – epidemic diagnosis increases worldwide

D. Antiviral resistance

- 2009 – 5,2 mil. people on ART, but 15 mil. should be. Universal access – generics (WHO), 60 countries
- 78%, 76%/67% should viral supression after 6, 12, 24 months
- Drug resistance testing is still expensive and complex
- Second line therapy is related with increasing mortality

1) Acquired drug resistance
   CD4 counts are same in those with resist wild type or due to acquired drug resistance
2) Suboptimal adherence is associated with resistance, 72% associated with RTI
   Adverse reactions RR 1,5
   Painrelief RR 1,7
   Education RR 2,0
   Female OR 2,4
3) Cause depending drug resistance
   Raltegravir is since 2009 free of charge for salvage therapy / Darunavir / Lopinavir + RAL = 3rd line therapy

E. ARV in pregnancy

1) Lifelong ART in all pregnant with >350
2) Prevention of MTCT – short term ARV (3M)
   3 possibilities: 1. AZT/3TC – nelfinavir during labor + 1 week
   2. AZT/3TC/NVR 18M
   3. SD NVR + NVR to child as well
   Postpartum resistance – H 184 – 28% (mutation), other 1%
   All drugs – 2,8% - 1st trimester exposure (similar to other drugs)
   Folinic acid is protective, from 18M – 0,26% abnormalities
   AZT + lopi + NVR – 2% abnormality, 25% premature birth but 0,1% mortality only. All ARV go to milk
   Breastfeeding – 3TC is 3x higher
   • Is efavirenz safe in 1st trimester: 0,14-0,36 AE but not clear if there are due to EFV
   Monkeys – 3/20 had nerval tube, only 2% of teratogenes are teragogenic in humans. EFV is only "D" according to FDA, but WHO – bans of EFV only during the 1st trimester

Metaanalysis/review: RR nonsignificant ! – 0,85 (NS). Prevalence of birth deffects is 2,9%, neuronal tube deffect – 0,08%, RR in 1st trimester – NS (0,91) only 1 neuronal tube in 1300 children

- Tenofovir – animal studies – problem, however in humans no evidence of toxicity

1) ANRS-EP 38 – (MM) - 15 years old children, 79 of 93 on HAART
   - high anti HIV activity
   - availability of pediatric ARV formulation
   - adherence issues (Zonfaly et al, 2009)
     decrease HIV and DNA in 10 years

2) 18-month follow up. 10% lost of follow up

3) Predicting virologic failure if HIV copies >1000 cop/ml
   2nd line LPV/rtv + ddI + (ABC or 3TC or AZT)
   <400 HIV RNA copies >400
   nevirapin and low CD4 were not predictors of virologic failure
   4,3% of 64 children - on 2-nd line failure, only 3 children died

4) Plabo II Children study – Triple class virologic failure (Placebo II Anch Lab Med 2010, 170 (5), 410-419)
   Permanently infected children <16 years infected >1998
   Started with NNRTI + 2NRTI or PI or 2(3) NRTI
   Virologic failure was defined as failure on 3 drugs – VL >500 copies of RNA
   40% initiated HAART, 1998-2002

5) Adherence – rates – 2,1 mil. children infected
   - 90% in SSA
   - RTI coverage was 35% in SS and 50% SEA and 85% Eastern Europe/Central Asia
   - Adherence >80%
   - Drug doses update, adherence 61%
   - Adherence is significantly higher in low income countries!

6) Why is prevalence of HIV in SE Africa 7x higher than in West Africa – Islam + circumcision, SSA – spread of multiple viruses
   Africa has 67% of all HIV but only 10% of all population
   Africa and MSM – as in 38 african countries (all apart of Seychelles and RSA)
   Therefore they are not included in guidelines

7) PMTC in Kenya and RSA: 30% children will be infected and 50% will die <10 years
   We can prevent for <2% transmission rates. Survival can be timely HAART as early as possible in newborn. Breastfeeding is all. Adults in Kenya (320 000) get HAART in 70% an in children however <10%. In KE – 95% HAART/DT clinics
   700 Nutrition services – important part of HIV pediatric care. Lab. CD4 or CD%. VL is not routinely monitored.

8) Subsaharan Africa – SSA and HIV
   1. 22,4 mil. (67% of all), 70% of 2 mil. children, 7 mil. orphans

2. 1990-RSA less, 2010 – RSA 25% ! Botswana + Zimbabwe 30-35%
3. Mortality – HIV is responsible for 40% of all deaths, TBC 5%
4. ART coverage – 44% (north Africa only 15%)
5. Highest in children – young women, migration, displacement (Mobile population – 15-25%)

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. – **14.** Abstracts. 15th AIDS Congress, Vienna 12 – 18.7.2010 Vienna, International AIDS Society 2010, 1599pp. – **15.** Abstracts 20th ECCMID, Vienna 1 – 4.4.2010 Vienna, CMI Supll 1, Clin Microbiol Infection, Vol. 20, N=S1, 1336pp.

MATERNAL AND NEONATAL/CHILDRENęS MORTALITY IN TROPICS

E. Mitterpach, V. Krcmery, G. Mikolasova, H. Konosova

SEUC programme Nairobi Kenya

Abstract: Readers digest from Lancet from 2010 is presented and analyzed.

Main results of the search(1-12)

1. Maternal mortality for 181 countries – Progress towards Millenium Goal 5 (Hogan, M et al. Lancet 375, 2010, 1609) – 342 900 maternal deaths in 2008, down from 526 000 in 1980. The global MMR decreased from 422 to 320 (1980, 1990) and to 251(2008). Yearly decline was 1,5, exception Zimbabwe 5,5%. More than 50% deaths were in 6 countries: India, Nigeria, Ethiopia, DOR, Congo, Pakistan, Afganistan
2. Spousal violence and fetal loss in an African setting: Alio, A: Lancet 2009, 373, 2562, Spousal Violence women, fetal mortality RR 1,5 and can be reduced from 50% to 17-33%.
3. Filippi, V. et al. Lancet, 35, 2010, 999-1001 Effects of severe obstetric complications of women health and infant mortality in Benin: Women with severe complications in developing countries face higher risk of complications during pregnancy and had higher hypertension (OR 5,8), fever (1,2) and infant mortality (OR 11,0!) and after death of the infant had depression (OR 3,4) and poor health.
4. Black J et al. Lancet 375, 2010, 1969-87: Global causes of child mortality in 2008. It's estimated 8,8 mil. deaths younger 25 years in 2008, infectious causes were 68%, pneumonia 18% (1,5 mil. deaths), diarrhea (15% - 1,3 mil.), 41% neonatal causes (3,6 mil.) – preterm 12%, asphyxia 9%, sepsis 6%: 50% of child deaths occured in 5 countries: India, Chine, DOR, Nigeria, Pakistan. Africa: 4,2 million child death, Southeast Asia – 2,4, Americas 0,3, Afganistan, Pakistan, Iran – 2,4 millions.
5. Nbanga J et al. Lancet 375, 9733, 2250-2254: Diabetes in subsaharian Africa in children. Ketosis – prove atypical diabetes is commonest. Rate of misdiagnosed DM is high. Prevalence – Tanzania 1%, Sudan 10-12%, Kenya 4,2%, South Africa 4%-8%. Prevalence – newly diagnosed – highest Sudan and Tanzania (type 1 DM – most die in Tanzania, but not in Sudan – 50%)
6. Neonatal, Postnatal childhood and under 5 mortality in 187 countries (1970-2010) Millenium Goal No. 4. (Lancet 2010, 375, 1988-1999 Rajarantam, J. et al). Worldwide mortality in 1990 -13 mil. and 2010 only 7,8 mil. death (8,8 mil. in 2008). Neonatal death 3,1 mil. – 33% in SE Asia and 50% in SS Africa and only 2% in EU/USA. Decline noted in Angola, Botswana, Congo, DOR, Kenya, Lesotho, Rwanda.
7. Ronswan, K. et al: Effect of parents death on child survival in Rural Bangladesh (Lancet 2010, 375, 2024-31) 144 000 live birth and 14 000 neonatal deaths (16%), cummulative probability of child survival 10 years was 90% in those whoęs mother was alive and 24% in those who's mother will die – ceasation of breastfeeding and mother care.
8. Bhutta, Z. A.: Countdown to 2010 decade report – stock of maternal, newborn and child survival (Lancet, 2010, 375, 2032). 47 countries progress accelerated but in 12 decelerated!
   1990-2000-2010
   Burundi 188-178-168/1000 live births
   Cambodia 117-108-93
   Ethiopia 210-149-109
   Kenya 105-128-130

Lesotho 101-109-80
Haiti 159-90-70
Rwanda 174-186-112
Sudan 124-115-109

INCREASE (HIV) – Ceasarean section 4-9% Kenya, 3-6% Haiti, 3-8% Rwanda, Ethiopia 8-9%

9. AlmaAta Rebirth and Revision: (Lanet 2008, 372, 950), Rohde, J.: 30 countries with higher reduction are analysed – Thailand, Cuba, Vietnam, Latin Americas (Caribbean)
10. AlmaAta Rebirth: Intervention to adress maternal, newborn and child survival (Lancet 2008, 372, 964). Tab. 1. Strategies – interventions suitable for delivery in primary care settings: 1) Low dose aspirin in pregnancy, 17% reduction of eclampsia, 14% reduction of neonatal death, 2) Calcium supplementation during pregnancy – 30% reduction of hypertension, 3) Referral to oxytocin use – 50% reduction of blood loss and PVH, 4) Antibiotics in preterm ruptures – 32% reduction of infections, 5) MgSO4 for preeclampsia – 40% reduction of eclampsia, 6) Antenatal steroids for stillbirth – 31% reduction of neonatal mortality, 30% reduction of infections, 7) Basic resuscital training – 30% reduction of asfyxia, 8) Rapid ATB to neonatal sepsis – 20% reduction of infection metabolites, 9) Insecticide treated bednets – 70% reduction of malaria and 18% reduction of all cause mortality, 10) IPT with S/P in mothers – reduction of placental anemia, clinical malaria, stillbirths, mother/neonatal anemia.

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12.** Rohde, J.: Lancet, 2008, 372, 950-964.

REPORT FROM AIDS MEETING 2010 – NURSING, SOCIAL AND HEALTH ISSUES OF AIDS

J. Bordacova, G. Mikolasova, P. Mikolasova, Z. Gazova,
M. Cervenkova, H. Konosova

SEUC Tropic Programme, Bl. Mother Theresa Hospital, Kibre Mengist, Etiopia

Abstract: Key observations (1-14 etc, MOPE 0093-280) from the Inhualiuval AIDS Coregoss are reported.

MOPE0093
Nutritional status and quality of life women living with HIV/AIDS
Presenting author email: ananya50@gmail.com
Conservation of muscle mass and maintenance of hemoglobin levels may improve QOL in HIV infected women. Thus there is e need for nutritional counseling and other nutritional intervention.

MOPE0094
Relationship betwen MUAC and CD4 count: results of a study carried out by the university college Donka hospital in Conakry, Guinea in 2009
Presenting author email: msanchez@gmail.com
The study revealed a significant correlation betwen CD4 cell count less than 350/ul and MUAC (< 210 mm) indicator of acute under nutrition.

MOPE0095
A pilot study to determine feasibility of procurement and distribution of standardized food basket of locally- available foods with HIV treatment in Kenya
Presenting author email: mndirangu@gsu.edu
Locally-available food-basket supplementation is well-accepted and feasible.

MOPE0096
Nutrition-and household-realted characteristics of adult HIV-infected patients with body mass index below 20kg/m² who are initiating antiretroviral therapy in Central Province, Kenya
Presenting author email: kevin.sztam@childrens.harvard.edu
Chronic diarrhea and CD4<50 cells{uL were associated with BMI, and may be a target for macronutrient supplementation.

MOPE0097
Nutrient compsition of breast milk in HIV-seropositive women
Presenting author email: evdheev@cut.ac.za
Large differences were found to exist amongst the content of individual human milk samples. Wide variability was detected in the concentrations of calcium and phosphorus. Calcium tended to have higher variation than phosphorus concentrations. Is summary our results agree fully with previous reports about the composition of human milk.

MOPE0098
The prevalence of malnutrition in people living with HIV/AIDS of China

Presenting author email: hua.jiang@aibai.cn
Malnutrition is becoming a major challenge for Chinese HIV positive clients, especialy for AIDS patient who inderwent inpatient treatment.

MOPE0100

Micronutrient supplementation to prevent disease progression in HIV infected adults in Botswana

Presenting author email: baumm@fiu.edu
This study demonstrated that long-term micronutrient supplementation was safe and signigicantly prolonged time to CD4+ count < 250 cells/ mm^3. This evidence supports the use of micronurient supplementation as an effective intervention.

MOPE0101

The effect of zinc supplementation on immune failure in HIV infected adults on stable anti-retroviral therapy (ART)

Presenting author email: baumm@fiu.edu
Zinc supplementation at nutritional levels was safe and prevented immunologic failure in HIV infected patients on stable ART.

MOPE0102

Effect of antioxidant supplementation on immune reconstitution and mitochondrial damage

Presenting author email: baumm@fiu.edu
Supplementation with the antioxidant formula improved immune reconstitution, signigicantly reduced mitochondrial damage and was safe.

MOPE0104

Household food insecurity among HIV-affected households with infant children in Port au Prince, Haiti

Presenting author email: cmw2002@med.cornell.edu
HIV-affected households with infants are characterized by a high degree of food insecurity, both in terms of insufficient quantity and quality of food intake. Food insecurity may be associated with the high rates of malnutrition and mortality seen in children born to HIV-infected mothers in Haiti and other resource poor settings. Attention to nutrional vulnerability schould be an integral part of HIV care for HIV-affected households with young children.

MOPE0105

Predictors of weight gain in a cohort of HIV-positive injection drug users (IDUs) initiating antiretroviral (ARV)therapy in Hanoi, Vietnam

Presenting author email: alice.tang@tufts.edu
Our results show that liquid supplements may be a useful intervention for weight gain in this population, particularly in the first 6 months of ARV treatment. However, presence of diarrhea 6 months after HAART initiation needs to be addressed in order for weight gain to be sustained.

MOPE0107

Relationship of exclusive breastfeeding to infections and growth of Tanzanian children born to HIV-infected women

Presenting author email: rmwiru@gmail.com
Exclusive breastfeeding is strongly associated with reductions in the risk of respiratory and diarrhea morbidities during the first six months of life among children born to HIV-infected women.

MOPE0111

A study on speciation and antifungal susceptibility pattern of Candida isolates from HIV pattern with oropharyngeal Candidiasis and correlation with CD4 count

Presenting author email: geetha411958@gmail.com

Azole resistance and non albicans Candida isolates were more common in HIVpatients with CD4 count < 200 cells/µl indicating the emergence of resistant Candida isolates with immunosuppresion.

MOPE0113

Increased risk of progressive multifocal leukoencephalopathy in HIV-infected patients with liver cirrhosis and long term viral suppression

Presenting author email: martin.gisinger@uki.at

The smal number of patients presented precludes firm conclusions. Arriving at a diagnosis of PML may be challenging in patients with liver cirrhosis, and mistaking PML for a stroke or another cirrhosis-related disorder may occur more frequently than anticipated.

MOPE0115

Case fatality due to cryptococcal meningitis in a retrospective cohort in Kenya

Presenting author email: pennerja@hotmail.com

Charts were reviewed for 78,5% (51/65) of patients who had a positive sCrAg. Among HIV-positive outpatients receiving care in FACES, CM had high case-fatality. Efforts to reduce case-fatality should include improving access to antiretroviral drugs.

MOPE0117

Comparative study of terminal opportunistic infections in HIV/AIDS, in pre and post HAART era:a nedele necropsy study

Presenting author email: duttashok06@yahoo.co.in

Although Tuberculosis continues to be commonest OI, incidence of localized form of disease seems to be higher in post HAART era. It appears that the HAART leads to reduction in the incidence of cryptococcosis and the other opportunistic infections practically disappear. This information can be of immense use for clinicians treating the seriously ill HIV-positive patients.

MOPE0119

Treatment options for HIV infected children presenting with ear infections at an HIV pediatric care centre in Uganda

Presenting author email: jddungu@baylor-uganda.org

For hudnred and twenty one (421) ear swab specimens from children aged 4,6 monts to 20 years (median age was 5,5 years) were species were isolated in 84 (21,8%), pseudomonas species in 80 (20,7%), staphylococcus aureus in 78 (20,2%) specimens, escherichia species in 30 (7,8%) specimens, Klebsiella species 25 (6,5%) specimens and no growth in 23 (6,0%) specimens. Ampicillin/chloramphenicol schould not be used to treat ear infections. A larger antibiotic susceptability study should be done to inform guidelines revision.

MOPE0121

Lesons learned during the 2009 H1N1 outbreak in Mexico City: respiratory symptoms does not necessarily mean pandemic influenza in subjects with AIDS

Presenting author email: arielrash@hotmail.com

MOPE0122

Vitamin D status in Ugandan adults with HIV and tuberculosis

Presenting author email: dnansera@yahoo.co.uk

Despite year-round sun exposure, HIV-positive Ugandan patients with and without TB commonly had vitamin D deficiency. Hypercalcemia was not present in any subject with TB.

MOPE0124

Usefulness of abdominal ultrasound in initial work up of HIV patients

Presenting author email: drpsdin@yahoo.com

Abdominal lymphadenopathy as detected by abdominal ultrasonography was a common finding (18,57%) in this study. Because of this finding the WHO stage appeared to change in 7,14% cases. This had therapeutic and prognostic implecations.

MOPE0202

Antibody responses to hepatitis A virus vaccination in Thai HIV-infected children with immune recovery after antiretroviral therapy

Presenting author email: vsirisan@rihes.org

The prevalence of HAV protective antibody among. Thai HIV-infected children is low. Standard 2-dose HAV vaccination is immunogenic and safe.

MOPE0203

Predictors of seasonal influenza vaccine immunogenicity in HIV infected adults

Presenting author email: ccooper@ottawahospital.on.ca

Baseline HAI titre > 1:10 was highly predictive of seroprotection at weeks 8 and 20 (all antigens), doubling of titres at week 8 (all), and doubling of titres at week 20 (A/Uruguay and B/Florida). Yearly provision of increased antigen dose plus booster improves vaccine immunogenicity to circulating influenza strains in HIV.

MOPE0205

Tuberculin positivity among HIV-positive patients in AIDSRelief sites and Implications on Nigerian national strategy for isoniazid preventive therapy

Presenting author email: dotun.ihv@gmail.com

These findings suggest a significant effect of HIV on delayed hypersensitivity reactions despite considerable immune reconstitution above CD4 of 250. Therefore value of TST above 5mm may strongly indicate possible TB disease particularly in patients with severe immunosuppresion. This supports the inclusion of TSP as an adjunct in the diagnostic algorithm for TB in Nigeria as clinical and radiological diagnosis may be atypical in TB/HIV settings.

MOPE0206

Correlates of immunological response to H1N1 adjuvant vaccine in HIV-infected subjects

Presenting author email: simona.digiambenetto@rm.unicatt.it

After a single vaccination with 7,5 μg dose there was a substantial rise in HI-antibody GMTs in HIV+ subjects although those with CD4<350cells/μL would require a boosting dose. Subjects with CD4 nadir <200cells/μL are at increased risk of non-response.

MOPE0207

Efficacy and immunogenicity of trivalent inactivated influenza vaccine (TIV) in HIV-infected children: a randomized, double-blind placebo-controlled trial

Presentihg author email: violari@mweb.co.za
TIV was modestly immunogenic in HIV-infected children, but did not confer demonstrable protection against confirmed influenza illness indicating the need for alternate strategies for protecting these children.

MOPE0208
Infidence of HIV-related diagnoses before and after initiation of highly active antiretroviral therapy in children in LEGACY
Presenting author email: sxn9@cdc.gov
The increased post HAART indidence of some SHRDs (zoster, ITP, HSV) in this US cohort, though not statistically significant, suggests IRIS is a phenomenon that can occur in children as well as adults.

MOPE0211
Incidence and risk factors for TB-IRIS in HIV-positive patients in North India
Presenting author email: tripathiak2005@hotmail.com
The risk factors associated with the development of TB-IRIS were low CD4 count, low Hb level, PPD positivity, and the presence of hepato-splenomegaly and abdominal lymphadenopathy ultrasonographically at baseline.

MOPE0216
Effectiveness of a PMTCT programe in rural Western Kenya: the experience of Médecins sans Frontiéres
Presenting author email: cecilia.ferreyra@barcelona.msf.org
Our data show a good level of enrolment but low global coverage rate. However it demonstrates that ARV regimens can be implemented in low resource rural settings with marked decreases of MTCT. To increase the coverage of MTCT programs remains the main challenge.

MOPE0218
Effectiveness and shortcomings of an antiretroviral (ART) multi-drug protocol to reduce mother-to-child transmission of HIV in the Djoungolo urban health district in Yaound, Cameroon
Presenting author email: njom_anne@yahoo.fr
Antiretroviral multidrugs protocols for PMTCT can succed in urban health district of low resource settings though 25,8% babies who are still missing appropriate regimen and / or duration are at higher risk of monther-to-child HIV transmitted infection or early death.

MOPE0219
Field testing of the Mother-Baby Pack (MBP) design for PMTCT
Presenting author email: thumbert@unicef.org

References:
1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. - **14.** Abstract Book Volume 2, XVIII International AIDS Conference, July 18-23 2010 • Vienna, Austria, http://www.aids2010.org/WebContent/File/AIDS2010_Abstracts_Vol_2_Friday_23July_web.pdf.

PUBLIC HEALTH NURSING AND SOCIAL ISSUES OF AIDS

M. Cervenkova, G. Mikolasova, J. Bordacova, A. Kalavska,
I. Kmit, H. Konosova

Kibre Mengist Sr. Mother Theresa Hospital SEUC tropic Programme Ethiopia

THPE0118
Efavirenz-versus nevirapine-containing combination antiretroviral drug regimens for the initial treatment of HIV: a meta-analysis

THPE0120
South African antiretroviral treatment guidelines for women: how well are they being followed and for whom?

THPE0122
Late diagnosis of HIV infection results in a higher mortality but not in virological failure after starting HAART
LT is the most common presentation to medical care for HIV infected patients in our center.Crude mortality is significantly higher in LT.Retention to care is shorter in LT,however,VF is not more common in LT who remain in care in the first year after HAART.
jsmadero@yahoo.com

THPE0124
The effect of lopinavir/r monotherapy on viral load and on the selection of resistance-associated mutations in seminal plasma.

THPE0126
Failure of first line therapy and inequalities in switching to second time in adults treated in urban and rural ART programs:multicentric analysis in 28 MSF-supported Africa and Asia sites.
mar.pujades@epicentre.msf.org

THPE0132
Immunological benefit of raltegravir when used as part of switch strategies
In patients with undetectable plasma viremia under HAART and CD4 counts less than 500 cells/mL, a switch to RAL in associated with significant CD4 gains. These results support the use of RAL as part of switch or intensification.
garridocarolina@hotmail.com

THPE0134
Prolonged delay to switching to second-line therapy in South African antiretroviral programme
10 patients had a documented treatment interruption prior to failure, but did not have a shorter time to treatment failure. Despite twice yearly HIV-1 viral load testing,treatment switches occur with significant delay in patients with documented virological failure.

THPE0136
Single boosted protease inhibitor versus double boosted protease inhibitors for the salvage therapy in HIV-infected patients.

No additional benefit is found in term of treatment responses in HIV-infected patients failing NNRTI-based regimen who subsequently salvaged with double boosted Pis compared to single boosted PI whereas tolerability and metabolic effects are not different.
drweerawat@hotmail.com

THPE0138
Clinical outcomes associated with the use of modern salvage therapy
The availability of new generation drugs has provided a dramatic imrpovement in the effectiveness of salvage therapy regimens allowing up to 81% of highly resistant patients who have experienced multiple treatment failure to achieve full suppression of viral replication.
mhull@cfenet.ubc.ca

THPE0147
Raltegravir in the prevention of mlother-to-child transmission of HIV: high concentrations demonstrated in newborns
Adding raltegravir to the optimised background regimen was associated with rapid reduction in maternal VL.Disproportionately high neonatal RPC indicated effective placental transfer,potentially reflecting immature neonatal UGT1a1 mediated glucuronidation and a possible role for pre-loading the infant. However,raltegravir concentrations had fallen to sub-therapeutic within 72 hours of birth in one baby.
mrosenvinge@nhs.net

THPE0148
Use of tenofovir in a cohort of HIV-infected pregnant women in their infants
Tenofovir was found to be a well tolerated component of HAART in single center eyperienced. Longer-term assessment of tenofovir effects childhood growth and larger prospective studies of tenofovir use in pregnant women are warranted.
Antonio.dibiagio@hsanmartino.liguria.it

THPE0154
Field ecperiences with CD4 counters: linitations, requrements and reccomendations
There is not „best machine“ on the market. However, there is a „ best approach to determine the requirements on a local (project(and national level and to develop criteria on a local scale as a basis for the best choice. We present a suggestion for such an approach.
Jennifer.rath@medmissio.de

THPE0161
Post-exposure prophylaxis of breastfeeding HIV-exposed infants with antiretroviral drugs to age 14 weeks: update efficacy results of the PEPI-Malawi trial.
Final results confirm that 14 weeks of daily infant antiretroviral reduce postnatal HIV infection by 70% at 14 weeks and results in an absolut reduction in infection of 4-5% at age 9 and 24 months compared to control. Continued transmission after prophylaxis stops suggests prolonged infant prophylaxis is needed.

THPE0162
Multiple and non- immediate family caregivers for HIV-infected children and risk factors for poor HIV treatment response, Mombasa, Kenya
Our data indicate that HIV-infected children with the best virologic and immnulogic treatment

outcomes were those with a limited number of immediate relatives as accompanying caregivers. Imrpovement of pediatric outcomes in resource-limited settings may require interventions to ensure that close, consistent caregivers are involved in care, and adherence counseling is provided to caregivers who are directly responsible for administration of medications.
Aabid.ahmed@mkomani.org

THPE0167
Survival benefits of early infant HAART are compromised when HIV-1 diagnosis is delayed
In less than 5 month old HIV-1 infected infants initiang HAART,survival was significantly lower than CHER.WHO stage 3/4, low WAZ, and diarrhea produced mortality, either via delaying HAART or reflecting irreversible HIV-1 disease. Early infant HIV-1 diagnosis and HAART prior to symptomatic disease in essential to maximize infant survival.

THPE0168
Characteristiscs of patients on second-line antiretroviral therapy (ART) at the Botswana-Baylor Children s Clinical Centre of Excellence (BBCCCOE)
A substantial number of children failed first-line HAART less than two years after initiation. Mean time from virological failure to change of therapy may not be optimal. These data need continued tracking with the advent of LPV/r-based first- line ART for most newly-infected infents, in whose cohort it may differ. Response of both cohorts to second-line ART should studied.

THPE0173
Impact on child mortality of changes in HIV testing and treatment guidelines in Namibia: evidence from two faith-based hospitals
The change in guidelines was associated with ab increased risk of mortality, even when controlling for sex, age, clinical and immunological status of the child, though this result was not statistically significant. One possible interpretation for this result is that, despite controlling for the age of the child, the substantially hoigher percentage of children under one year of age starting ART under the new guidelines will have higher mortality, as children under the revised guidelines.
cpenders@intrahealth.org

THPE0175
The use of total lymphocyte count as a surrogate for low CD4+ T lymphocyte cell counts among HIV-1 infected women in Tanzabia
The use of TLC as a proxy for the estimation of low CD4 cell counts in a population of HIV-1-infected adults from sub-Saharan Africa was not substantiated. Inexpensive methods to quantify CD4 cell counts in Africa are needed.
mgomella@post.harvard.edu

THPE0177
Nucleoside-and non-nucleoside reverse transcriptase inhibitor (NRTI and NNRTI) resistance mutations in paediatric and adolescent patients failing first-line antiretroviral therapy (ART) at the Botswana- Baylor Children s Clinical Centre of Excellence (BBCCCOE) in Gaborone, Botswana
Mutations compromising non-thymidine analogue back-bones (containing TDF, ABC or ddI) were rare or non-existent, suggesting empiric change of AZT- or d4T-containing firts-line ART regimens should be to non-thymidine analogue-containing NRTI backbones.
agomila@bcm.edu

THPE0178

First line antiretroviral therapy in HIV- infected children in Vietnam : 12 months outcome analysis During the first 2 years of the program, the majority of the children enrolled were five years old or younger and most presented in advanced clinical/immnulogical stages. Mortality was highest in the first 3 months of ART. Early HIV diagnosis and tretament should be amphasized.

doanhlu@gmail.com

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. –**14.** Abstract Book Volume 2, XVIII International AIDS Conference, July 18-23 2010 • Vienna, Austria, http://www.aids2010.org/WebContent/File/AIDS2010_Abstracts_Vol_2_Friday_23July_web.pdf.

UPDATE IN HIV – NURSING AND SOCIAL PROBLEMS

M. Cervenkova, J. Bordacova, G. Mikolasova, P. Mikolasova, Z. Gazova,, L. Fizik, A. Kalavska, I. Kmit, H. Konosova

St. Elizabeth University College, Bratislava, Slovak Republic

MOPE0221

Pregnancy outcomes among HIV- infected women with adnanced WHO stages of HIV disease

Pregnant women with advanced WHO stages of HIV-infection before or at the early poor pregnancy outcomes and the highest rate of MTCT.

spposohova@mail.ru

MOPE0222

Reasons why women default from a prevention of mother - to- child transmission (PMTCT) program in the informal settlement of Kibera, Nairobi, Kenya: results from a qualitative study

In 2006 the Kenyan Ministry of Health and Medecins Sant Frontiéres integrated free prevention of mother-to-child transmission (PMTCT) services into antenatal care (ANC)at two primary health care clinics in Kibera.After one year 43% of women who enrolled in PMTCT at first ANC visit had defaulted, why women default from PMTCT after testing HIV+.

Conclusion: Participation prevented many women in Kibera from adhering to PTMTC. Men played a significant role in women defaulting from PTMTC.HIV testing and PTMTC education, male involvement in ANC, and counseling customized to assist each woman in her risk assessment, may create environments more conducive to PMTCT adherence.

barbaratelfer@gmail.com

MOPE0225

Decision about mode of delivery can be safely based on viral load one month before delivery

VL measured one month pre - delivery can predict VL control at delivery in 93,8% and obstetrical decision about mode of delivery can be safely based on that value.

esau@uninet.com.br

MOPE0228

Challenges in impelementation of recommended feeding options among HIV- positive mothers in Northern Uganda

Despite recommended feeding options, a remarkable proportion of mothers still practices mixed feeding that is associated with higher HIV transmission.

bkabogoza@numatuganda.org

MOPE0232

Preventing mother-to-child transmission for women who use drugs in Eastern Europe and Central Asia: international best practice models and regional applications

Providing a range of services including evidence-based drug treatment and antenatal care is critical to reducing MTCT in Eastern Europe and Central Asia and best practice models should be adopted in the region.

rmalyuta@unicef.org

MOPE0237
Neonatal outcomes after perinatal exposure to HIV-1 in Argentina

MOPE0241
Low risk of resistance in women receiving HAART for the prevention of breastfeeding-associated transmission and discontinuing drugs six months after delivery
Our findings show that the risk of developing resistance mutations in compliant women who receive HAART prophylaxis and interrupt drugs 6 months after delivery. We confirm the higher risk of developing underlining the importance of drug adherence in these patients.
Marina.giuliano@iss.it

MOPEO0244
Trends in the management and outcomes of HIV- infected women and their infants at sites in Latin America and the Caribbean: 2002-2009
The rate of mother-to-child transmission (MTCT) of HIV did not change significantly over time (overall is 1%).
Over time, the initial VL and CD4 greater Access to ARVs and/or use of more potent regimens. There were temporal trends in the types of ARV regimens used during pregnancy.
Maternal outcomes improved over time (more women with VL more than 1000 after delivery) and the MTCT rate was very low.
laurafreimanis@westat.com

MOPE0247
Assessing four prong strategies to improve ART quality and coverage for preventing vertical transmissions in six countries- case study on the failures and challenges in policy development and imlementation of prevention of vertical transmission programmes in Argentina, Cambodia, Moldova, Morocco, Uganda and Zimbabwe
editpc@gmail.com

MOPE0249
HIV/HCV and HIV/HBV coinfections study of mother- to- infant transmission
HIV-1/HCV coinfection in pregnant women increase the HIV -1 perinatal transmission rate.

MOPE0253
Needs assessment of MSH PMTCT program in Haiti: stakeholder perceptions
Support services (including transportation and psychosocial services) are essential to support adherence to PMTCT among low-income HIV – positive pregnant women. Imrpoved support services are being implemented in 2010.
clintworldwide@yahoo.com

MOPE0258
Implementing rapid HIV testing on labor and delivery units: limiting mother-to-child transmission and providing Access to care for HIV-infected women.
This project is serving as a model for facilities looking to improve prenatal HIV testing rates, as well as for hospitals implementing rapid testing in Emergency Departments.
RTLD will continue until 2011, by which time i tis anticipated that most hospitals will provide some rapis testing on LandD.

MOPE0261

How early should HAART be started to maximize PMTCT effectiveness?

Women eligible for HAART should receive at least 4 weeks of treatment prior delivery and preferably 16 weeks for maximal benefit. Novel approaches to link PMTCT and HIV treatment are urgently needed.

MOPE0263

Prevention of mother-to-child transmission of HIV infection (PTMCT) at the Botswana – Baylor Children s Clinical Centre of Excellence (BBCCCOE) in Gaborone, Botswana: 2009 cohort

MOPE0267

PMTCT combination prophylaxis: the challange of adherence to a complex regimen during pregnancy in Kyela, Tanzania

Full adherence to combination regimens in pregnant women is difficult to achieve in peripheral, resource-limited regions. This translates into a serious derogation of the assumed high effectiveness of combination prophylaxis in thise settings.Our findings underline the importance of general extensive supervision for pregnant women enrolled in complex regimens, and perticularly of encouraging women to seek additional support in their social enviroments through status disclosure.

MOPE0271

The impact of different antiretroviral regimens of prevention of mother-to-child transmission in routine practice in Cameroon (ANRS 12140- PEDIACAM)

1470 children born to 1419 HIV infected mothers were included. HIV status was known before pregnancy for 42% of mothers. Breastfeeding was declared by 11% of mothers. Ten percent of children were lost to follow up at first 6 weeks scheduled visit. The MTCT rate was 3,8%.

Current recommendations for PMTCT are effective when they are impelemnted. There is urgent need to improve Access to PMTCT strategies.

tejiokem@pasteur-yaounde.org

MOPE0276

Obstetric and neonatal outcomes in HIV-infected pregnant women and their infants in Ukraine

Unadjusted MTCT raes were 14,6% among preerm and 6,3% among term infants. PTD was associated with an increased MTCT risk, after adjusting for antiretroviral prophylaxis/treatment, mode of delivery and IDU. The neonatal mortality rate was 6,1 per 1000, but reached 8,6 per 1000 among IDUs.

Despite progress in PMTCT in Ukraine, MTCT rates remain high.Contributing factors include maternal IDU and PTD, which are strongly interlated. Improving Access to care for IDU women should be a key strategy for decreasing paediatric HIV.

MOPE0278

Second babies delivered by HIV-positive mothers accessing care in a prevention of mother-to-child transmission programe:characteristics and HIV transmission rate

ginaoladokun@yahoo.com

MOPE0279

Early impact of extended prophylaxis with Nevirapine on HIV acquisition among infants in Rural Rakai, Uganda

The six-week infant infection rates were 11,0% (18/164), 2,63% in mid – 2007/2008 period and 1,2% (1/82)
In the mid – 2008/2009 period.
vddungu@rhsp.org

MOPE0280

Predictions of CD4-eligibility for ART among pregnant HIV- infected women in Urban Zambia

22,661 HIV- infected pregnant women with CD4 counts were available for analysis. Of these, 10, 941 (48,3%)women had a CD 4 count less than 350.
Cherry.liu@cidrz.org

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. –**14.** Abstract Book Volume 2, XVIII International AIDS Conference, July 18-23 2010 • Vienna, Austria, http://www.aids2010.org/WebContent/File/AIDS2010_Abstracts_Vol_2_Friday_23July_web.pdf.

PUBLIC HEALTH, NURSING, SOCIAL ECONOMIC AND ETHICAL ISSUES OF MRSA AND HEPATITIS. REPORT FROM DITAN CONGRESS, BEJING, CHINA

J. Sokolova, J. Medved, H. Konosova

School of Health Care and Social Work, Trnava University, Trnava, Slovakia
St. Elizabeth University of Health and Social Sciences, Bratislava, Slovakia

Abstract: Congress reput of major chinese in feetins diseases meeting is presented and focused on MRSA and viral hepatitis prevention aand management.

1. MRSA

MRSA infections have decreased or stabilized over recent years in many European countries. However MRSA proportions still exceed 10 % in 24 participating countries within EARSS and exceed 25% in 11 countries (EARSS 2009). MRSA infections are associated with a worse prognosis than MSSA. Severe MRSA infections, bacteraemia/endocarditis and VAP are associated with particularly high risk of complications and increased mortality. Optimal therapy for these infections remains a therapeutic challenge.(-16)

- Management of severe MRSA infections

1. Catheter-related MRSA sepsis
   a) Initial antibiotic therapy
      - Blood cultures positive for GPS in clusters.
      - Removal of the catheter and:
      - Vancomycin 30 mg/kg or teicoplanin
      - Daptomycin 6 mg/kg, equally effective
   b) Directed antibiotic therapy
      - Good evolution, continue vancomycin
      - Persistent disease VAN MIC < 1 μg/ml vs. > 1μg/ml
      - Daptomycin 6 mg/kg
      - Linezolid
   c) Duration of therapy: 14 days
2. Persistent bacteremia
   - Almost a third of patients with bacteremia > 72 h
   - Probability of metastatic focus of infection
   - Catheter removal, careful physical examination
   - Optimize vancomycin therapy
   - Add a second antibiotic
3. MRSA Endocarditis
   Empirical antibiotic treatment
   - Cloxacillin (200 mg/kg) plus vancomycin (30 mg/kg)
   - Daptomycin 6 mg/kg
     Directed antibiotic treatment
   a) right-sided endocarditis
      - Vancomycin (trough > 15 μg/ml)
      - Daptomycin 6 mg/kg (VAN MIC > 1 mg/ml)
   b) prosthetic valve endocarditis
      - Vancomycin plus gentamicin plus rifampicin

c) left-sided endocarditis
   - Vancomycin (VAN < 1 μg/ml)
   - Daptomycin 10 mg/kg

In case of failure: - Imipinem plus fosfomycin/linezolid

4. Treatment of MRSA VAP
   - patients treated with linezolid had significantly higher survival rates than those treated with vancomycin
   - linezolid may be prefered if patients have renal insuffciency or are receiving other nephrotoxic agents or when infections is caused a strain with a vancomycin MIC value of >1 μg/ml
   - Reasons to screen MRSA:
     - prevent infection in an elective surgical patient
     - identify carriers so that they may be isolated
     - prevent transmission so that overall MRSA infections rates fall
     - molecular tests are not better than cultures in reducing MRSA acquisition
     - 46% reduction in MRSA bacteremia if molecular methods for screening were done, comparated with no screening units
   - MRSA in Asia:
     - community-associated MRSA have emerged in Asian countries, these clones)also have been spreading into hospitals in some countries
     - antimicrobial resistance to non-beta-lactam agents varied by genotypes and epidemiological definition of community-associated or healthcare-associated infection was not adequate for prediction of antimicrobial resistance

2. Effect of climate change on mosquito vectors

- climate change will theoretically affect the spatial and temporal distribution of vector borne diseases
- since transmission dynamic of VBDs is affected by agricultural practices, deforestation, urbanization, socioeconomic conditions and intervention measures, projections may be viewed as plausible guidelines and not certainty
- introduction of VBDs in new areas may be restricted due to life style, socioeconomic conditions and health infrastructure
- impact assessment, strengthening of health infrastructure should form part of Preparedness plan
- with better preparedness and SWOT analysis of strategies threat of Climate Change may be negated

3. Viral hepatitis B

- plasma derived HBV vaccine approved in 1981
- recombinant HBV vaccine approved in 1986
- higher viral loads are associated with long-term complications
- appropriate anti-viral agents with high genetic resistance barrier as first line mono-therapy or appropriate roadmap strategy
- promulgate proper diagnostic assessment treat the right patient at the right time with the right drug
- positive impact on health burden is achievable
- Treatment of hepatitis:

	Serum HBV DNA reduction after 1 year therapy	Resistance	Safety	Cost
Lamivudin	5 log10cpm	50-70% after 5 years	Good	$
Adefovir	4 log10cpm	30-40% after 5 years	Renal toxicity in <10%	$$$
Entecavir	6log10cpm	1,2 after 6 years	Good	$$$
Telbivudine	6logcpm	11-25% after 2 years	Myopathy and neuropathy in <5%	$
Tenofovir	6log10cpm	None after 2+ years	Renal toxicity in a few	$$$$$$
Clevudine	5log10cpm	Around 10% after 1 year	Myopathy/neuropathy 5-10% after 1-2 years	-
Pegylated interferon alpha 2a	4log10cpm	None	Flu-like symptoms, BM suppression	$$$$

- Management of hepatitis B patients theoretical versus practical:(7-12) The role of HBV DNA suppression and HBeAg seroconversion:

Age	HBeAg	HBV DNA	Fibrosis	ALT	CHB Phase	Managment	Treatment choice
< 40	Pos	> 6 log	<F3	Normal or raised	Immune tolerant or clearance	Observe, treat if ALT > 2-10+UKN	PegIFN
			>F3	Normal or raised	Immune clearance	Treat	NUC
		< 6 log	<F3	Normal or raised	Immune clearance	Observe if e-seroconverting	NUC
< 40	Neg	> 4 log	> F3	Normal or raised	E neg CHB	treat	NUC
			< F3	Normal or raised	E neg CHB	Consider therap	
		< 4 log	< F3	Normal	inactive	Observ	
> 40	Pos	> 6 log	F0-F4	Normal or raised	Immune clearance	Consider therapy, HCC surveilance	NUC
		< 6 log		Normal	Immune clearance	Treat	
> 40	Neg	> 4 log	F3 F4	Normal or raised	E neg CHB	Treat	NUC
		< 4 log	< F3	Normal or raised	E neg CHB or inactive	Observe consider therapy	

  - ultimate goal is HBV elimination and HBsAg loss to prevent liver cirrhosis and HCC
  - currently available therapeutic agents limit achievable therapeutic agents limit achievable therapeutic targets, hence the role of HBV DNA suppression and HBe seroconversion to be used as surrogates to indicate control of viral activity and hepatic necroinflammation in HBeAg positive patients
  - HBV DNA loss being a more direct indicator of loss of antigenic stimulation, which is a cause for immediate liver injury
  - whereas the occurrence of HBe serocorvension suggests establishment of immune control which can be long-term
  - treatment-induced DNA suppression without HBe seroconversion will require long term maintenance treatment
  - the choice of therapeutic agent and treatment goal should be tailored to the patients age, viral and hepatic status and the circumstance for which treatment is considerated

- The reimbursement policy and economic consideration
  - from complete response perspective, Telbivudine has a better incremental cost-effectiveness ratio compared to Entecavir for naive HBcAg positive CHB patients
  - 91,77 vs. 217,55 for 1% additional HBV DNA undetectable
  - 377,72 vs. 2610,54 for 1% additional e-seroconversion
  - 220,34 vs. 711,97 for 1% additional ALT normalization
  - results reflect one year data

- Immunopathogenesis of hepatic failure in HIV/HBV coinfected patients starting HAART
  - hepatic failure can occur in a range of clinical settings in booth mono and co-infection
  - the immunopathogenesis of hepatic flare following initiation of HBV-active HAART is consistent with HBV-IRD
  - a common risk factor for development of an IRD is low initial CD4 count
  - diagnosis and management of IRD is difficult
  - start ART in all HIV/HBV co-infected individuals who require treatment for their HBV infection, irrespective of CD4 cell count or WHO clinical stage

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57.

MALARIA UPDATE: HEALTH, SOCIAL NURSING AND ECONOMIC ASPECTS OF MALARIA IN ETHIOPIA AND SUBSAHARAN AFRICA AND SOUTHEAST ASIA. A TOP OF THE ICEBERG?

Stanova, A., Mikolasova, G., Kmit, I., Bugri, S.,
Tonzar, D., H. Konosova

St. Elizabeth University College Workstation Prague
St Mother Theresa in Kibre Mengist SEU project - Ethiopia

Abstract: Last knowledge Malaria in Ethiopia, Sub-Saharan Africa and Southeast Asia is discussed and briefly reviewed in these position papers.(1-13)

Withholding Antimalarials in Febrile Children Who Have a Negative Result for a Rapid Diagnostic Test
Valérie d'Acremont, Trop Doctor 43.2010
The availability of a rapid diagnostic test for malaria (RDTm) allows accurate diagnosis at all levels of health facilities. On the thousand children were recruited had a negative RDTm result (97%) of these children were cured on day 7.
Not giving antimalarial drugs in febrile children who had a negative RDTm result was safe, even in an area highly endemic for malaria. Our study provides evidence for treatment recommendations based on parasitological diagnosis in children <5 years old.

Lumbar Puncture in Children from an Area of Malaria Endemicity Who Present with a Febrile Seizure, Trop Doctor 43.2010
Although routine lumbar puncture (LP) is often recommended as part of the assessment of fever-associated seizures in children, accumulating evidence questions its value and reveals a decrease in its frequency. Our primary hypothesis was that children who present with a single seizure but with no clinical signs of meningism or coma do not require LP as part of initial diagnostic assessment. Eighty-one of these children (62.3%) had a final diagnosis of a simple febrile seizure. Proven or probable acute bacterial meningitis was more common in children with a single seizure and meningism or coma and in those with multiple seizures without or with meiningism or coma (2 [2.0%] and 30 [33.7%], respectively). Initial LP is unnecessary when careful clinical assessment indicates features of a simple febrile seizure.

Return of Chloroquine-Susceptible Falciparum Malaria in Malawi Was a Reexpansion of Diverse Susceptible Parasites
Miriam K. Laufer, Trop Doctor 23.2010
The spread of drug-resistant Plasmodium falciparum malaria has been a major impediment to malaria control and threatens prospects for elimination. We recently demonstrated the return of chloroquine-susceptible malaria in Malawi after chloroquine use was abandoned. In this study, we trace the origins of chloroquine-resistant and chloroquine-susceptible parasites in Malawi by sequencing the P. falciparum chloroquine resistance transporter gene (pfcrt) and by genotyping microsatellites flanking this gene in isolates from infection that occurred in Malawi from 1992 through 2005. Malaria parasites from 2005 harbored the expected wild type pfcrt haplotype associated with chloroquine. Chloroquine.susceptible parasites that predominate in Malawi likely represent a reexpansion of the susceptible parasites that survived in the population despite widespread drug pressure in the region.

Malaria preventive measures, health care seeking behaviour and malaria burden in defferent epidemiological settings in Sudan
The presence of any net varied between 6.6% and 40%, the percentage of people who reportedly slept under mosquito nets in the previous night varied between 35 and 80. Promp use of medications ranged between 14 and 48% with a delay of more than 24 h noticed in different areas. We found suboptimal health care seeking behaviour, coverage and use of preventive measures with a high malaria burden. We developed a model for future estimation of malaria episodes.

Insecticide-treated net coverage in Africa: mapping progress in 2000-07
Abdisalan M Noor
Lancet 2009
Findings In 2000, only 1.7 million (1.8%) African children living in stable malaria-endemic conditions were protected by an ITN and the number increased to 20.3 million (18.5%) by 2007 leaving 89.6 million children unprotected. Of these, 30, million wre living in some of the poorest areas of Africa: 54% were living in only seven countries and 25% in Nigeria alone. Overall, 33 (83%) countries were estimated to have ITN coverage of less than 40% in 2007. On average, we noted a grater increase in ITN coverage in areas where free distribution had operated between survey periods.

Diagnostic Difficulties with Plasmodium knowlesi Infection in Humans
Erma Sulistyaningsih
Emerging Infectious Diseases
Given the large distribution of the vector and the atural host of P. knowlesi in Southeast Asia, it is likely that P. knowlesi will be found in other part of Indonesia. As microscopic and molecular diagnosis of this parasite seems difficult, the underestimation of its distribution and clinical relevance can be assumed.

Azithromycin Combination Therapy for the Treatment of Uncomplicated Falciparum Malaria in Bangladesh: An Open-Label Randomized, Controlled Clinical Trial
Kamala Thriemer
The Journal of Infectious Diseases 2010,202(3):392-398
The 42-day cure rate by Kaplan-Meier analysis was 94.6% (95% confidence interval [CI], 89.38%-97.44%) in the azithromycin-artesunate arm and 97.0% (95% CI, 89.45%-99.40%) in the control arm. Our data suggest that azithromycin-artesunate in an efficacious and well-tolerated treatment for patients with uncomplicated falciparum malaria in Bangladesh.

Efficacy and Safety of Mefloquine, Artesunate, Mefloquine-Artesunate, and Praziquantel against Schistosoma haematobium: Randomized, Exploratory Open-Label Trial
Jennifer Keiser
Clinical Infectious Diseases
The high efficacy of mefloquine-artesunate against S.haematobium warrants further investigation. Individuals coinfected with Plasmodium and Schistosoma who were treated with a mefloquine-artesunate combination against malaria might have a dual benefit: clearance of malaria parasitemia and reduction of schistosomiasis related morbidity.

High Heritability of Malaria Parasite Clearance Rate Indicates a Genetic Basis for Artemisinin Resistance in Western Cambodia
Tim J. C. Anderson

The Journal of Infectious Diseases 2010,201(9):1326-1330
In western Cambodia, malaria parasites clear slowly from the blood after treatment with artemisinin derivatives, but it is unclear whether this results from parasite, host. Or other factors specific to this population. A substantial proportion (56%-58%) of the variation in clearance rate is explained by parasite genetics. This has 2 important implications: (1) selection with artemisinin derivatives will tend to drive resistance spread and (2) because heritability is high, the genes underlying parasite clearance rate may be identified by genome-wide association.

Extensive Drug Resistance Malaria and Tuberculosis
Chansuda Wongsrichanalai
Emerging Infectious Diseases, 2010
Malaria
Although the decreased sensitivity of malaria parasites to an antimalarial drug was first reported about a century ago in association with quinine, the term drug-resistant malaria was rarely used. Multidrug resistance of P. falciparum is strictly defined as resistance to >2 antimalarial compounds of different chemical classes, recommended by the National Malaria Control Program (NMCP). The Thailand-Cambodia border was the first area to be recognized as a multidrug resistant zone because of the successive failure of chloroquine, SP, and then mefloquine in the late 1980s.
The Case for Defining XDR malaria.
The emergence of artemisinin resistance creates the need to define a new subgroup of drug-resistant malaria, XDR malaria. High rates of recurrence of P.falciparum infection have already been found in Zanzibar after Coartem therapy and include several cases of recrudescence associated with lumefantrine-resistant parasistes. Designating a malaria-endemic area with artemisinin-resistant falciparum strains as an area with XDR malaria will signal an urgent need for action, such as ongoing public health attention and prioritizing funding and support. Introducing the term XDR malaria in association with artemisinin resistance should not discourage the deployment of ACTs in Africa, where it is hoped that these regimens will contribute to substantial reduction of malaria incidence and deaths.

Malaria in Africa: progress and prospects in the decade since the Abuja Declaration
Robert W Snow, Kevin Marsh
Lancet 2010,376:137-39
The first effect that good malaria control might be expected to have is a reduction in cause specific malaria morbidity and mortality. Because malaria accounts for a large proportion of attendances at clinics and admissions to hospital, this reduction would be of major public health importance. However, many experts have argued that malaria has a major, although poorly defined, effect on increasing propensity to other diseases, particularly invasive bacterial disease. With the decline in malaria transmission on the Kenyan coast, we have seen a remarkable reduction in admissions to hospital for children with life-threatening invasive bacterial diseases, particularly those caused by gram-negative organism. This trend has been paralleled by a halving in all-cause child mortality over 20 years.

African Burkitt's lymphoma: could collaboration with HIV-1 and malaria programmes reduce the high mortality rate?
Lancet 2010,375:1661-63
Cooperation, coordination, and collaboration with existing malaria and HIV-1 programmes might assist pilot efforts to provide efficient and effective treatment for Burkitt's lymphoma in Africa migh reverse, to some extent, the adverse structural effects of malaria and HIV-1 programmes that

scarce human resources from mainstream health care. It could boost correlative research though improved systematic surveillance, patient identification, and referrals for treatment. Such cooperation would be logical because P falciparum malaria is a presumed geographical co-factor for Burkitt's lymphoma and, in developed countries, HIV-1 infection is associated with a 60-fold-increased risk of the disease, and Burkittęs lymphoma is often AIDS defining.

Residual antimalarial concentrations before treatment in patients with malaria from Cambodia: Indication of drug pressure
Eva Maria Hodel
The Journal of infectious Diseases 2010, 202, (7):1088-1094
The findings demonstrate that there is high drug pressure and that many people still seek treatment in the private and informal sector, where appropriate treatment is not guaranteed. Promotion of comprehensive behavioral change, communication, community – based mobilization, and advocacy are vital to contain the emergence and spread of parasite resistance against new antimalarials.

Arterolane of Uncomplicated Plasmodium falciparum Malaria: A Phase II.
Arterolane at daily doses of 100 and 200 mg is a rapidly acting, effective, and safe synthetic antimalarian drug, which may potentially represent an alternative to artemisinin derivatives in antimalarial combination therapy.

Changes in the burden of malaria in sub-Saharan Africa
Wendy Prudhomme
Lancet Infect Dis 2010, 10:545-55
Malaria control in southern Africa (South Africa, Mozambique and Swaziland) began in the 1980s and has shown substantial, lasting declines linked to scale-up of specific interventions. In the Horn of Africa Ethiopia and Eritrea have also experienced substantial decreases in the burden of malaria linked to the introduction of malaria control measures. Substantial increases in funding for malaria control and the procurement and distribution of effective means for prevention and treatment are associated with falls in malaria burden.In central Africa, little progress has been documented, possibly because of publication bias. In some countries a decline inmalaria incidence began several years before scale-up of malaria control. In other countries, the change from a failing drug (chloroquine) to a more effective drug (sulphadoxine plus pyrimethamine or an artemisinin combination) led to immediate improvements, in others malaria reduction seemed to be associated with the scale-up of insecticide-treated bednets and indoor residual spraying.
The global fight against malaria is now being coordinated by the Roll Back Malaria Partnersip, and major donor foundations, such as the Bill and Melinda Gates Foundations, have greatly increased financial support for malaria research. When compared with the low coverage of malaria control measures in 1999 – 2001, these investments have resulted in an increase in global production, procurement, distribution and use of insectide-treated bednets (ITNs). There has also been an increase of about 25 times in the global procurement of artemisinin combination therapies (ACTs) in the past 5 years.

Changing malaria burden in sub-Saharan Africa

Horn of Africa	Change reported
Eritrea	83% decrease
East Africa	
Mwea, Kenya	100%
Rwanda	54%

Karuzi, Burundi	38%, no change in highlands
Uganda	54-275% increase
Korogwe, Tanzania	68-75% decrease
Western Kenya	32-256% increase
Uganda highlands	50% increase
Southern Africa	
Kwazulu Natal	91% decrease
Zambia	53% decrease
West Africa	
	No consistent trend, possible 18% decline in last years
	No consident trend
	48% increase
African Islands	No change

Malaria "burden" defined as worsening (red) if malaria indicators increased for 2 years consecutively, unchanged (blue) if malaria indicators decreased for atleast 2 years consecutively, or improving (green) if they did not change in either direction during the study. Malaria indicators used were the incidence of inpatient or outpatient cases of malaria, deaths from malaria in children, or the prevalence of malaria infection.

ACT=artemisinin combination
ITNs=insectide
IRS=indoor residual spraying
Indoor residual spraying, ITNs and ACTs reduce mortality and morbidity from malaria when deployed under controlled conditions. Indoor residual spraying probably had a key role in achieving successful malaria control in South Africa and on Bioko and Sao Tome islands but its effect seems to have been smaller in other places. There is strong evidence that ITNs can provide a substantial degree of protection against mortality and morbidity from malaria, especially when used by a high proportion of the population. Widespread deployment of ACTs, which are pertly gametocytocidal would be expected to have an effect on transmission of malaria in communities where a high proportion of infected individuals have symptoms and seek treatment. Thus, for example, introduction of ACTs might have contributed to the success of malaria control in South Africa. Finally, the transmissibility of P falciparum malaria might not be as high as has been previously thought, making it easier for any transmission blocking intervention directed at either the parasite (ACTs) or the vector (ITNs or indoor residual spraying) to reduce transmission.

Surveillance system useful after Haiti earthquake improvements needed for future
CDC. MMWR. 2010, 59:933-938
CDC. MMWR. 2010., 59:939-945
According to two reports from the CDC, more work needs to be done to improve data reporting, data quality and humanitarian response. Two weeks after the 7,0-magnitude earthquake, the Ministry of Public Health and Population, the Pan-American Health Organization, CDC and other global agencies instituted the National Sentinel Site Surveillance System to target relief efforts by tracking disease trends, discovering outbreaks and identifying the affected population.
According to one CDC report, from jan. 25 through April 24, 2010, 42, 361 people had reportable conditions.Fifty-four percent of these people were female and 32,6% were<5 years old. Were acute respiratory infection (16,3%), suspected malaria (10,3%) and fever due to an unknown cause (10%). Twelve percent of conditions were due to injuries.

Ninety-one non-governmental organizations had reported to the IDPSS at least once by April 24, 2010. No major disease outbreaks occurred through April 24, despite investigations for suspected clusters of typhoid fever and malaria.

Malaria imported into Réunion Island: is there a risk of re – emergence of the disease? (Transactions, 104, 2010, 199200.)
After a long period of endemicity until the 1950s, the World Health Organization considered autochthonous malaria eliminated from Réunion in 1979.
During this period, 684 imported malaria cases were reported. Median age of patients was 34,4 years and 22,1% were children≤15 years. Men represented 67,7% of cases and 59,1% of patients reported having taken chemoprophylaxis based on chloroquine alone. Incidence of malaria was considerably different by country destination. For Comoros, incidence was stable and high during the period accounting for 1481 cases per 100 000 travels in 2008. The rate was lower for travels to Madagascar, South Africa and Mayotte and decreased over the period to 37,19 and 3 per 100 000 respectively, by 2008. To avoid re-emergence of malaria on the island and to protect themselves, travelers should reduce their risks of acquisition and importation of parasites by using adequate preventive measures. A special preventive program and social mobilization should be a priority, essentially for the Comorian community in Réunion.

Doxycycline-chloroquine vs. doxycycline-placebo for malaria prophylaxis in nonimmune soldier: a double-blind randomized field trial in sub-Saharan Africa
Transactions of the Royal Society of Tropical medicine and hygiene 104 (2010) 290-297
Rémy Michel
Failures of malaria chemoprophylaxis have been related to a lack of compliance with doxycycline due to its short elimination half-life.Adding a molecule with a long half-life to doxycycline could be useful to take over from this drug in case of occasional missed doses. A double-blind, placebo-controlled randomized field trial was designed to compare the tolerability of a doxycycline-chloroquine combination vs. doxycycline as malaria prophylaxis among French soldiers deployed in Africa. Data from 936 volunteers were analyzed. In both groups, the proportion of volunteers who reported at least one adverse effect was about 57%.Tolerability was similar in the groups except for a higher proportion of nausea or vomiting in the doxycycline-chloroquine group. The reported compliance rate was 86,6% and was similar in the two groups. Eight Plasmodium falciparum malaria cases were diagnosed in the doxycycline group and seven in the doxycycline-chloroquine group. The efficacy of the two chemoprophylaxis regimens was similar. Our study was the first randomized field trial to assess a doxycycline-chloroquine combination as malaria prophylaxis and showed no significant decrease of overall tolerability of the combination compared with doxycycline alone. Our results showed that a doxycycline-chloroquine combination could be a safe combination for malaria chemoprophylaxis.

Incidence of malaria and risk factors in Italian travelers to malaria endemic countries
Roberto Romi
Travel medicine and Infectious Disease (2010), 8, 144-154
Background: Imported malaria has been an increasing problem in Italy in the last three decades of the 1900s, representing the main risk for travelers visiting tropical. Out of the 5219 malaria cases reported and confirmed in the study period five were autochthonous and 5214 imported, 1518 of which occurred in Italian citizen and 3696 in foreigners. Between 2000 and 2006 imported malaria cases fell from 977 to 630 respectively with a total reduction of about 36%. Most of the cases

were contracted in Africa (93%) and Plasmodium falciparum was the etiological agent in 83% of the cases, with an annual average fatality rate of about 0,5%.

Malaria and travelers visiting friends and relatives
Androula Pavli
Travel Medicine and Infectious Disease (2010), 8, 161-168
Summary Among all travel-acquired illnesses, malaria carries the greatest burden not only considering the number of imported cases but also the potential of a fatal outcome.

Country of study	No. of cases	Severe cases (%) fatality rate (%)
Australia	246	2.46%
Italy	175	9.1/0
Italy	5898	NR/0.93
Italy	380	23/0
Spain	1579	NR/0.045
Switzerland	109	37
United Kingdom 1987-2006	39,300	NR/0.46
United States 2005	1528	NR/0.45

Efficacy of artesunate with sulfalene plus pyrimethamine versus praziquantel for treatment of Schistosoma mansoni in Kenyan children: an open-label randomized controlled trial
Charles O Obonyo
Lancet Infect Dis 2010, 10: 603-11
In this open-label randomised trial in Rarieda district of western Kenya, we enrolled school children (aged 6-15 years) who had Schistosoma mansoni infection according to duplicate Kato-Katz thick smears from a stool sample. Computer-generated block randomization was used to assign children (1:1) to receive artesunate (100mg) with sulfalene (also known as sulfamethoxypyrazine, 250 mg) plus pyrimathamine (12,5mg) as one dose every 24h for 3 days or one dose of praziquantel (40 mg/kg per day). The primary efficacy endpoint was the number of participants cured 28 days after treatment. The standard treatment with praziquantel is more effective than artesunate with sulfalene plus pyrimethamine in the treatment of children with S mansoni infection in western Kenya. Wheter artemisinin-based combination therapy has a role in the treatment of schistosomiasis is unclear.

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. –

EMERGING TUBERCULOSIS – HEALTH AND SOCIAL ASPECTS

Kmit, I., Sulka, F., Mikolasova, G., Stanova, A., Bugri, S., Matel, A.,
Tonzar, D., H. Konosova

St. Elizabeth University College, Kibre Mengist project - Ethiopia, Workstation Prague

Antiretrovirals and isoniazid preventive therapy in the prevention of HIV-associated tuberculosis in settings with limited health-care resources

Antiretroviral therapy and isoniazid preventive therapy (IPT) are both effective interventions to prevent HIV-associated tuberculosis, but work via different mechanisms. We propose that these two interventions might best be used as complementary strategies at different stages of HIV progression. At relatively high CD4-cell counts, IPT reduces tuberculosis risk by 64% (95% CI 39—78%) in patients with positive tuberculin skin tests, and is the key tuberculosis preventive intervention before patients are eligible for antiretroviral therapy. However, at low CD4-cell counts, reliable exclusion of active tuberculosis is difficult, fewer patients are eligible for IPT, and waning immune function might limit the durability of its effect. In such patients, antiretroviral therapy is the primary intervention needed, reducing tuberculosis incidence by 67% (95% CI 61—73%). However, tuberculosis risk during long-term antiretroviral therapy remains several times higher than background, especially in those with poor immune recovery. Patients might therefore derive additional benefit from combined use of IPT and antiretroviral therapy to simultaneously treat mycobacterial infection and restore tuberculosis-specific immune function. For those first presenting with advanced immunodeficiency, we propose that concurrent IPT might best be delayed until completion of the first few months of antiretroviral therapy, when active tuberculosis can be more reliably excluded. Data from randomised controlled trials are needed to underpin further development of public-health policy.

Introduction

Intensified case finding and infection-control measures need to be implemented among HIV-infected patients irrespective of the stage of HIV progression. However, we suggest that IPT and antiretroviral therapy have complementary roles for tuberculosis prevention at different stages of HIV progession. We will therefore discuss a rational basis for the coordinated use of these two interventions.

Tuberculosis risk during HIV progression

HIV-negative individuals with mycobacterium tuberculosis infection have a lifetime risk of developing active tuberculosis of approximately 10%. By contrast, in those co-infected with M tuberculosis and HIV, risk might exceed 10% each year, depending on the degree of immunodeficiency and prevailing socioeconomic conditions. After HIV seroconversion, the risk of tuberculosis doubles or trebles within the first 2 years of infection and continues to rise as CD4-cell counts decrease (figure1). In Italy, tuberculosis incidence rates among groups of antiretroviral therapy-naive patients with CD4-cell counts of less than $200x10^6$/L, 200 – $350x10^6$/L, and greater than $350x10^6$/L were 4.7, 1.8, and 0.5 cases per 100 person-years, respectively.

Antiretrovirals for preventive treatment

Use of antiretroviral therapy was associated with a 67% reduction in tuberculosis incidence rates in nine observational cohort. A beneficial tuberculosis preventive effect might or might not beobserved in patients with baseline CD4-cell counts greater than $350x10^6$/L. Despite the major tuber-

culosis risk reduction during antiretroviral therapy, long-term incidence rates nevertheless remain several times higher than those observed in non-HIV infected people in the same communities. Even in patients who achieve CD4-cell counts above $500x10^6$/L, tuberculosis risk remains about two times higher than background. Thus, adjunctive tuberculosis prevention interventions are needed during long-term antiretroviral therapy.

Isoniazid preventive therapy

IPT has proven preventive efficacy in both non-HIV – infected and HIV-infected individuals. In a metaanalysis of 11 trials involving over 73 000non-HIV – infected participants, use of IPT was associated with a tuberculosis risk reduction of 60% (95% CI 48-69%) over a follow-up period of at least 2 years . The effect was similar for 6-month and 12-month durations of therapy.

In a meta-analysis of eight placebo-controlled trials involving 4136 HIV-infected participants in Africa, Spain, Haiti, and North, Central, and South America, the overall efficacy of IPT was 33% (95% CI 13 – 49%) in patients not stratified by TST status. A greater risk reduction of 64% (95% CI 39 – 78%) was observed among patients with positive TST reactions.

	Isoniazid preventive therapy		**Antiretroviral therapy**	
Eligibilty according to WHO guidelines	High CD4-cell count Recommended for tho se who are unlikely to have tuberculosis and to be targeted at those who TST positive, if assessed 83 (in practice symptomatic patients are generally excluded)	Low CD4-cell count Recommended for those who are unlikely to have tuberculosis, and to be targeted at those who are TST positive, if assessed 83 (in practice, symptomatic patients are generally excluded)	High CD4-cell count Not generally recommended for patients with CD4 – cell counts >350x106/L unless at WHO stage 3 or 4 disease48	Low CD4-cell count Eliglibity criteria include all patients with CD4-cell count <350x106/L and/or WHO stage 3 or 4 disease48
Efficacy for tuberculosis prevention	33% (95% Cl 13 – 49%) risk reduction in unselected patients 67	CD4 – cell – specific data are not available	Benefit may or may not be observed at baseline CD4 >350x106/L32,40	67% (95% Cl 61-73%) protection in antiretroviral therapy cohorts (figure 2) 12, 37-39, 42, 47, 57, 84
TST status and preventive efficacy	64% (95% Cl 39-78%) risk reduction in TST-positive patients; no significant benefit in TST-negative patients67	Proportion of patients who are TST positive and may benefit is small; no significant benefit in TST-negative patients67		B of TST status56 enefit irrespective
Duration of tuberculosis prevention	Diminishing effect during follow-up after treatment completion; effect limited to 0.5 years in African studies56, 70, 71	CD4-cell-specific data are not available	Sustained benefit during 5 years of follow-up18, 49	Sustained tuberculosis risk reduction related to CD4 – cell count increases during antiretroviral therapy 18, 49,57,85
Effect on all – cause mortality	No effect in unselected patients; a significant reduction in TST – positive patients (risk ratio 0.74 [95% CI 0.55-1.00])67	CD4 – cell specific data are not available	Survival benefit gained by starting therapy before CD4 – cell counts fall below 350x106/L86	Immediate, major sustained reduction in mortality risk related CD4-cell count recovery 58,87

TST = tuberculin skin test

Table 1: **Comparison of the tuberculosis preventive efficacy and mortality risk reduction derived from use of antiretroviral therapy or isoniazid preventive therapy in patients with different degrees of immunodeficiency in health – care resource-limited settings**

Comparison of preventive treatments

There are important differences in the use of antiretroviral therapy and IPT for tuberculosis prevention (table 1) and consideration of these might help inform the development of a rational strategy for their complementary use.

Because antiretroviral therapy is a lifelong intervention, the duration of preventive efficacy is sustained and is directly proportionate to rise over many years. By contrast, IP Tis typically administered in course of 6-12 months and the duration of the protective effect is limited. (table 1). Because progressive immunodeficiency is likely to be a key factor limiting the duration of the effect of IPT, restoration of tuberculosis-specific imunity by antiretroviral therapy might prolong the beneficial effect of IPT. Emerging evidnce also provides support for the use of long-term IPT in TST – positive individuals.

Isoniazid resistence and exclusion of active tuberculosis

Mycobacterial drug resistance is an important consideration with regard to preventive interventions. First, the efficacy of IP Tis likely to be undermined if strains of latent M tuberculosis are resistant to isoniazid whereas the efficacy of antiretroviral therapy is not. Second, exclusion of active tuberculosis is an important eligibility criterion for starting IPT in view of concern that inadvertent use of IPT in patients with active tuberculosis could potentially result in the generation of isoniazid resistance.

Early treatment outcomes in extensively drug-resistance TB

Public Health, Nursing and social aspects of tuberculosis and HIV a deadly synergy

Abstract: Current knowledgen TB and TB related diseases from 2010 is reviewed and diseassed.

Key words: tuberculosis, HIV

In South Africa, 64% of patients with XDR-TB survived≥3 months beyond treatment initiation, early outcomes did not differ significantly by HIV status. Previous reports from South Africa indicated that almost all patients with extensively drug-resistant (XDR) TB were HIV infected and that the disease was almost always fatal.

The decline of pneumococcal resistance after cessation of mass antibiotic distributions for trachoma

After 6 biannual mass distributions of oral azitromycin for trachoma in Ethiopian communities, 76,8% (95% confidence interval /CI/, 66,3% - 85,1%) of nasopharyngeal Streptococcus pneumoniae isolates from children aged 1 – 5 years were resistant to macrolides. Twelve and 24 months after the last azitromycin treatment, resistance decreased to 30,6% (95% CI, 18,8%-40,4%, P<.001) and 20,8% (95% CI, 12,7% - 30,7%, P<.001), respectively. Macrolide resistance decreases after antibiotic pressure is removed.

Vitamin D supplementation for the prevention of acute respiratory tract infection: aA randomized, double-blinded trial among young finnish men

This local vitamin D activation might be an important component of host defense, because it has downstream effects, including upregulation of the cathelicidin antimicrobial peptide gene, which is an important component of innate imunity in the lungs.

This placebo – controlled double- blinded study was comprised of 164 voluntary young Finnish undergoing compulsory periodic military training as conscript in an infantry unit comprised of 400 men in the Finnish Defence Forces.

Finally, both our earlier findings that a low vitamin D status at initial entry into military service and subsequent respiratory infections are significantly related and the results of the present study

provide some evidence for the vitamin D supplementation for the prevention of respiratory infections. 400 IU of vitamin D daily was used in the study.

Prolonged infectiousness of tuberculosis patients in directly observed therapy short – course program with standardized therapy, Sean P. Fitzwater, Clinical Infectious Diseasses 2010, 51(4):371-378

Median conversion time from culture positivity to culture negativity of 38,5 days was unaffected by baseline smear status. Patients with fully susceptible tuberculosis had a median time to culture conversion of 37 days, 10% remained culture positive at day 60.

Smear and culture conversion in treated tuberculosis patients takes longer than is conventionally believed, even with fully susceptible disease, and must be accounted for in tuberculosis treatment and prevention programs. Persistent day 60 smear positivity is a poor predictor of multidrug resistance. The industrialized – world convention of universal baseline DST for tuberculosis patients should become the standard of care in multidrug resistance-affected resource-limited settings.

Tuberculosis transmission to young children in a South African community: Modeling household and community infection risks, Clinical Infectious diseasses 2010,51(4):401-408

A recent study reported a 40% annual risk of child tuberculosis infection in a southern African township. The annual risk of tuberculosis infection of preschol children predominantly results from infectious residents in the home. However, even with limited social interactions, a substantial proportion of transmission may occur from nenresident adults. The benefits of increased ventilation are maximized when the period of infectivity is reduced by prompt treatment of source cases.

Tuberculosis research update

Tropical medicine and International health, Volume 15 No 8

ART for prevention of HIV – associated TB

Antiretroviral therapy results in restoration of immune responses to Mycobacterium tuberculosis, leading to sustained reductions in long-term TB risk

Immune reconstitution disease associated with TB

Two forms are distinguished: „paradoxical“ TB-IRD, in which ART initiation results in clinical deterioration of TB during initial successful treatment, and unmasking TB, in which ART initiation triggers. Between 8% and 43% of patients with TB initiating ART develop paradoxical TB-IRD

MDR/XDR-TB

Mycobacterium tuberculosis is an old pathogen, but recent changes in drug-susceptibility profiles have brought on new challenges for global TB control. Multidrug resistant-TB is defined as resistance to rifampicin and isoniazid, whilst XDR-TB is defined as resistance to rifampicin, isoniazid, any fluoroquinolone and one of the second-line injectable agents, i.e. amikacin, kanamycin or capreomycin. In 2007 an estimated 5,3% or approximately 500 000 of all TB cases worlwide were because of MDR-TB strains, approximately 6% or 40 000 of these were estimated to be XDR (WHO 2009)

Clinical presentation

The clinical presentation of MDR-TB and XDR-TB is similar to that of drug-sensitive.

Management challenges

A failing regimen 1 should never be replacet by WHO regimen 2, which consist of 8 months of therapy that includes streptomycin during the intensive phase, as this would constitute adding a single drug to a failing regimen. Selection of an MDR-TB treatment regimen must be based on local drug-susceptibility petterns and the patients previous treatment history. High-dose isoniazid

should be considered as this is cheap and may overcome resistance at low mean inhibitory concentrations of the drug. Until newer therapeutic options including the promising drug TMC 207 and newer diagnostic Technologies become widely available.

TB vaccine development

Recent evidence suggests that BCG may prevent M. tuberculosis infection, in addition to its known efficacy against severe childhood forms of TB. Regardless, although>120 milion doses of BCG have been given worldwide, many questions surrounding variables that determine efficacy remain. No definitive evidence exists to suggest that BCG will protect HIV-infected infants against TB. Further, BCG disease is very common in these infants, both in the presence and absence of ART. The WHO has therefore recommended that BCG not be given to HIV-exposed infants at birth, but only once they are shown to be HIV. Implementing this recommendation is problematic when follow-up for the HIV diagnosis cannot be guaranteed, as missed vaccination may precipitate an epidemic of severe TB in the approximately 95% of HIV-exposed infants who do not become infected. In these low-resource environments, i tis generally in the best interest of health of the majority of infants to administer BCG at birth to all, including HIV-exposed infants.
Fighting HIV/AIDS, tuberculosis and malaria: one world, one partnership

Tropical medicine and International health

Charles S. Mgone
Continue with research on preventive HIV vaccines and microbicides including exploring efficacy of antiretroviral-based combinations
When to switch and what to switch to
High priority and the needs of specific populations sucha s discordant couples
Taking into account the ongoing studies on PrEP, it was suggested that currently there are no specific research gaps that need addresing
Tuberculosis
To increase efforts to improve diagnosis of tuberculosis. This should include studies on rapid assays
To identify strategies to improve active case detection, reduction in diagnostic delays
Research on shortening and simplification of TB treatment
Improvement in the management of childhood tuberculosis

Intensive tuberculosis screening for HIV-infected patients starting antiretroviral therapy in Durban, South Africa

Ingrid V. Bassett
Of 1035 subjects, 487 (59%) were female, median CD4 cell count was 100 cells/mL. A total of 210 subjects (20%) were receiving tuberculosis treatment and were excluded. Of the remaining 825 subjects, 158 (19%) had positive sputum cultures, of whom 14 (9%) had a positive AFB smear and 82 (52%) reported cough. The combination of cough, other symptoms, AFB smear, and chest radiograph had 93% sensitivity (95% confidence interval, 88% - 97%) and 15% specificity (95% confidence interval, 13% - 18%). The incremental cost of intensive screening including culture was $360,- per additional tuberculosis case identified.
Nearly 20% of patients starting ART in Durban, South Africa, had undiagnoses, culture – positive pulmonary tuberculosis. Despite WHO recommendations, neither cough nor AFB smear were adequately sensitive for screening.

Rapid molecular detection of tuberculosis and Rifampin resistance, Catharina C. Boehme, New England J MED 363,11 NEJM.ORG September 9, 2010-09-10

We assessed the performance of Xpert MTB/RIF, an automated molecular test for Mycobacterium tuberculosis (MTB) and resistance to rifampin (RIF), with fully integrated sample processing in 1730 patients with suspected drug-sensitive or multidrug-resistant pulmonary tuberculosis. Eligible patients in peru, Azerbaijan, South Africa and India provided three sputum specimens each. Among culture-positive patients a single direct MTB/RIF test identified 551 of 561 patients with smear-positive tuberculosis (98,2%) and 124 of 171 with smear-negative tuberculosis (72,5%). The test was specific in 604 of 609 patients without tuberculosis (99,2%). Among patients with smear-negative, culture-positive tuberculosis, the addition of a second MTB/RIF test increased sensitivity by 12,6 percentage points and a third by 5,1 percentage points, to a total of 90,2%. The MTB/RIF testprovided sensitive detection of tuberculosis and rifampin resistance directly from untreated sputum in less than 2 hours with minimal hands-on time.

MDR tuberculosis – critical steps for prevention and control

Multidrug-resistant (MDR) tuberculosis is defined as disease, MDR tuberculosis appears to be rising even faster (e.g., in Botswana and South Korea) However in estonia, Hong Kong, the United States, and Orel and Tomsk Oblasts (in the Russian Federation) the incidence of tuberculosis is falling and the incidence of MDR tuberculosis appears to be falling even faster.

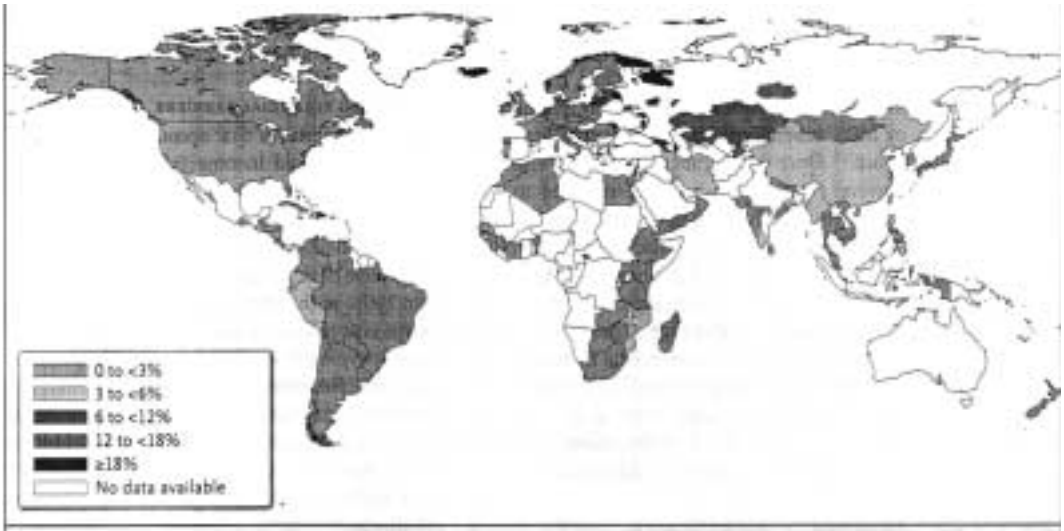


Figure 1. Distribution of the Proportion of Cases of MDR Tuberculosis among New Cases of Tuberculosis, 1994–2009.

The following 27 countries are responsible for 85% of the world's estimated cases of MDR tuberculosis and are classified as countries with a high burden of MDR tuberculosis: China, India, Russia, Pakistan, Bangladesh, South Africa, Ukraine, Indonesia, Philippines, Nigeria, Uzbekistan, Democratic Republic of Congo, Kazakhstan, Vietnam, Ethiopia, Myanmar, Tajikistan, Azerbaijan, Moldova, Kyrgyzstan, Belarus, Georgia, Bulgaria, Lithuania, Armenia, Latvia, and Estonia. Adapted from the 2010 report on MDR and XDR tuberculosis from the WHO.[3]

The WHO-recommended Stop TB Strategy provides the framework for treating. Health expenditures that account for more than 40% of household income (after deducting the cost of basic subsistence) have been defined as catastrophic. In virtually all countries with a high burden of MDR tuberculosis, treatment costs (per course of treatment) for one person are more than 100% of the gross national income per capita (the cost of second-line anti-tuberculosis drugs alone is typically $2,000 to $4,000 per patients.

Table 1. Critical Challenges in the Control of MDR Tuberculosis and XDR Tuberculosis and Potential Solutions Supported by the WHO.*

Goal	Problem	Proposed Solution
Finance control and treatment for MDR-TB and XDR-TB	Estimated cost for 2010–2015 is $15.2 billion (in U.S.$), increasing annually from <$1.3 billion in 2010 to $4.4 billion in 2015. Spending needed is already in excess of the planned national MDR-TB budgets for 2010	Maximize use of domestic resources while targeting resources from the Global Fund to Fight AIDS, Tuberculosis, and Malaria, UNITAID, and other external funding mechanisms
Abolish financial barriers	In countries with a high burden of MDR-TB, treatment costs for a single patient constitute more than 100% of the gross national income per capita	Improve health care financing schemes to strive for universal access to prevention and control; decentralize services to reduce indirect costs; promote patient adherence to treatment; and subsidize care provided in the private sector
Engage all care providers in appropriate MDR-TB prevention and control	A substantial proportion of patients seek care from providers who do not follow internationally recommended standards of treatment	Engage diverse providers (public, voluntary, private, and corporate) to align TB-management practices with WHO International Standards for TB Care
Optimize MDR-TB and XDR-TB management and care	Persons with infectious MDR-TB and XDR-TB remain in the community for long periods of time because of delayed diagnosis and initiation of treatment with second-line anti-TB drugs; hospitalization of patients with MDR-TB or XDR-TB poses problems of nosocomial transmission and is costly and inconvenient for patients	Ensure timely diagnosis and treatment initiation for patients with MDR-TB or XDR-TB; implement appropriate models of care, preferably outpatient, to ensure patient-centered care, avoid disease transmission in health care facilities, and make rational use of financial resources
Address laboratory crisis	In 2008, in 27 countries with the highest burden of MDR-TB, only 1% of patients with newly diagnosed TB and 3% of patients with previously treated TB underwent drug-susceptibility testing	Strengthen laboratory services by using new molecular technologies
Ensure access to quality-assured anti-TB drugs	Use of counterfeit and poor-quality anti-TB drugs, which can lead to development and amplification of drug resistance, is well documented, but there is no accurate estimate of the scale of the problem	Secure affordable, quality-assured anti-TB drugs using national procurement mechanisms while building up a reliable second-line anti-TB drug market, with manufacturers investing in increased volumes and improved quality
Restrict availability of anti-TB drugs	Wide availability of anti-TB drugs over the counter in retail pharmacies encourages self-treatment and the purchase of inadequate quantities and combinations of medicines	Restrict drug availability to accredited providers by combining government policy, agreement with providers and industry on improved marketing practices, and optimization of the protocol for drug management and supply specified by the national TB program
Prioritize TB infection control	Ongoing transmission of MDR-TB and XDR-TB occurs in health care facilities and congregate settings because of inadequate infection control	Engage wide range of stakeholders across the health system (e.g., hospital administrators, architects, engineers, and health care workers), including those concerned with control of other infections with airborne potential, such as influenza, to implement infection-control policies
Address global health workforce crisis	Shortage of trained staff to effectively manage the 1.6 million MDR-TB cases expected by 2015 is exacerbated in many low-income countries by active recruitment of staff by industrialized countries	Revise or update strategic plans for increasing the TB health care workforce (including private health care providers) to improve basic TB control and to scale up MDR-TB control
Improve surveillance systems	Estimates of the burden of drug-resistant TB globally and by country remain incomplete and less than accurate	Establish or strengthen continuous surveillance systems for drug-resistant TB
Invest in research and development of new diagnostic tests, drugs, and vaccines	Tools for prevention, diagnosis, and treatment of TB and drug-resistant TB are obsolete	Ensure collaboration between development and technical agencies to facilitate development and field testing of new tools for prevention, diagnosis, and treatment of TB

*The international group known as UNITAID purchases and distributes diagnostic tests and drugs used in the treatment of HIV–AIDS, malaria, and tuberculosis. AIDS denotes acquired immunodeficiency syndrome, MDR-TB multidrug-resistant tuberculosis, TB tuberculosis, WHO World Health Organization, and XDR-TB extensively drug-resistant tuberculosis.

Responding to the laboratory crisis

Weak laboratory capacity remains a serious impediment to prompt diagnosis and better control of MDR tuberculosis. The goal of universal Access to drug-susceptibility testing has not yet been achieved. In 2008, drug-susceptibility testing was performed in only 1% of new tuberculosis cases and 3% of previosly treated cases in the 27 countries with the highest burden of MDR tuberculosis. Anti-tuberculosis drugs are widely available over the counter in retail pharmacies in many countries. This encourages self-treatment and the purchase of inadequate quantites and combinations of medicines. By October 2009, 20 of the 27 countries with the highest burden of MDR tuberculosis were updating their national tuberculosis-control plans to include a component addressing MDR tuberculosis, funding requested for the management of MDR tuberculosis was by far the largest requested for all aspects of tuberculosis control: more than $500 milion (in U.S. dollars) was requested for the management of MDR tuberculosis in 28 countries over a period of 5 years.

Review of multidrug-resistant and extensively drug-resistant TB: global perspectives with a focus on sub-SaharanAfrica, Giovanni Battista Migliori, Tropical Medicine and international Health, Vol. 15, No9, sept 2010, pp1052-1066

Tuberculosis (TB) remains a global emergency and is responsible for 1,7 million deaths annually. Widespread global misuse of isoniazid and rifampicin over three decades has resulted in emergence of the ominous spread of multidrug-resistant TB (MDR-TB) and extensively drug-resistant TB (XDR-TB) globally.

Definitions for drug-resistant TB

The definitions of drug-susceptible and drug-resistant TB are given in Table 1. Pan-susceptible TB is defined as TB caused by Mycobacterium tuberculosis (M. tuberculosis) strains that are susceptible to all first-line anti-TB drugs. MDR-TB is defined as resistance to the two key first-line anti-TB drugs, isoniazid (INH) and rifampicin (RMP/RIF).

The term XDR-TB appeared in the literature for the first time in March 2006, in a report jointly published by WHO and CDC, to describe a very aggressive form of disease characterised by high mortality rates. I tis presently defined as TB caused by strains of M. tuberculosis, which are the following: (a) resistant to at least INH and RMP

(b) plus any fluoroquinolone and

(c) to at least one of three injectable drugs used in anti-TB treatment capreomycin, kanamycin or amikacin (Holz & Cegielski 2007, Migliori et all. 2007)

Table 1 Definitions of Drug-susceptible and drug-resistant tuberculosis (TB)

Pan (Totally)-susceptible TB Tuberculosis caused by *Mycobacterium tuberculosis* strains susceptible to all first-line anti-TB drugs.
INH Monoresistant TB Tuberculosis caused by *M. tuberculosis* strains resistant only to INH
Multidrug-resistant tuberculosis (MDR-TB) Tuberculosis caused by *M. tuberculosis* strains resistant to at least two first-line anti-TB drugs INH and rifampicin (RMP)
Extensively drug-resistant tuberculosis (XDR-TB) Tuberculosis caused by *M. tuberculosis* resistant to RMP and INH *plus* any fluoroquinolone, and at least *one* of the three following injectable drugs: capreomycin, kanamycin or amikacin
Pan (Totally)-resistant TB Tuberculosis caused by *M. tuberculosis* resistant to all first and second-line anti-TB drugs

INH, isoniazid.

The latest data on the extent of drug-resistant TB are summarised in the 2010 WHO MDR-/XDR-TB Global report on surveillance. The proportions of MDR-TB among all new TB cases is shown in Figure 2. MDR-TB caused an estimated 150 000 deaths in 2008. The 2010WHO report estimates that 440 000 MDR-TB cases occuredd in 2008 (3,6% of the estimated total incident TB episodes). Of these. 360 000 were among new TB cases and

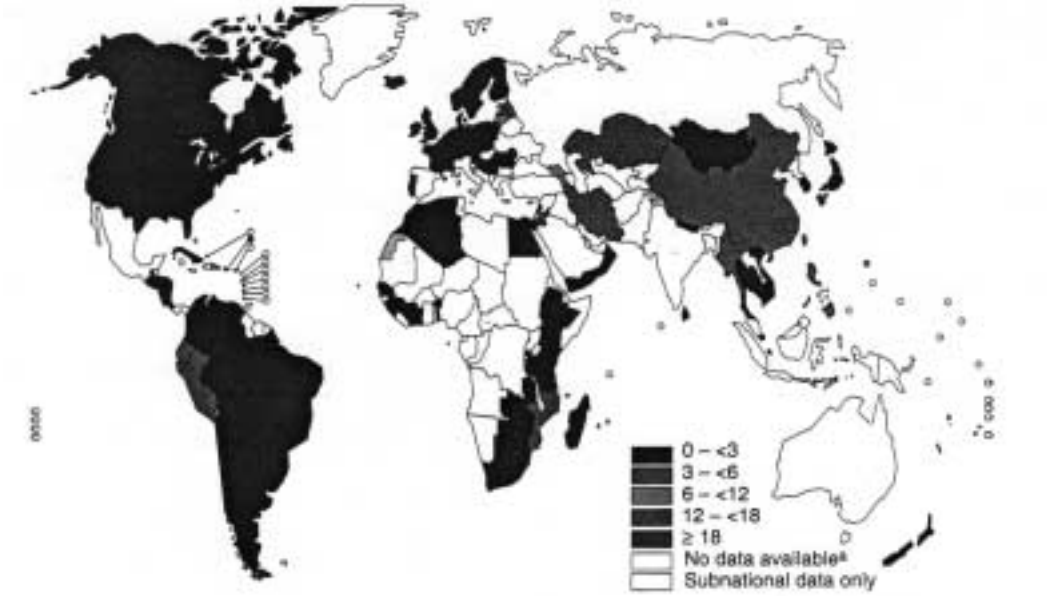
94 000 were among individuals previosly treated. Data on drug-resistant TB from Africa are very scare. India and China constitute approximately 50% of the global burden of MDR-TB, followed by the Russian Federation (9%). Eastern Europe and Central Asia have reported very high proportions of MDR-TB among new cases. The Russian Federations surveillance data from 12 of its oblasts and republic reported proportions of 23,8. – 28,3% MDR-TB among new TB cases in three of its oblasts in the north-western part of the country.

Role of HIV in fuelling the drug-resistant TB epidemic

About 8% of all infections with M. tuberculosis occur in people with HIV, makong it the most important opportunistic infection worldwide.

MDR-TB and XDR-TB in sub-Saharan Africa

There are scanty data about MDR-TB trends in Africa. According to the 2010 Global WHO Report (WHO 2010), only 22 of 46 countries of the African Region have provided data on drug-resistant TB. South Africa is theonly country that collects routine surveillance data. Thirty-four countries have reported MDR-TB cases and eight XDR-TB cases.



Australia, Democratic Republic of the Congo, Fiji, Guam, New Caledonia, Solomon Islands and Qatar reported data on combined new and previously treated cases.

Clinical presentation, symptoms and signs

The clinical presentation, symptoms and signs of patients with drug-resistant tuberculosis in the majority of cases do not substantially differ from that of patients with TB because of pan-susceptible M. tuberculosis strains.

Table 2 Drug groups for multidrug-resistant (MDR) and extensively drug-resistant (XDR-TB) tuberculosis treatment regimens for adults (adapted from Schaaf and Dheda (2009))

Drug group	Drug name	Daily dosage in mg for adults (<33 kg – dose in mg/kg)			
		< 33 kg dose in mg/kg	33–50 kg	51–70 kg	>70 kg (also maximum dose)
*Group 1: Oral first-line drugs to which the organism shows in vitro susceptibility by DST	Ethambutol	25	800–1200	1200–1600	1600–2000
	Pyrazinamide	30–40	1000–1750	1750–2000	2000–2500
†Group 2: Second-line injectable agents (streptomycin is first-line drug – not for use in MDR/XDR-TB)	Amikacin	15–20	500–750	750–1000	1000
	Kanamycin	15–20	500–750	750–1000	1000
	Capreomycin	15–20	500–750	750–1000	1000
†Group 3: Fluoroquinolones	Ofloxacin	15–20	800	800	800–1000
	Levofloxacin	7.5–10	750	750	750–1000
	Moxifloxacin	7.5–10	400	400	400
‡Group 4: Second-line oral bacteriostatic agents	Ethionamide (or prothionamide)	15–20	500	750	750–1000
		15–20	500	750	750–1000
	Cycloserine (or terizidone)	15–20	500	750	750–1000
		10–20	600	600	900
	Para-aminosalisylic acid (PAS)	150	8 g	8 g	8–12 g
§Group 5: Drugs of unclear use in drug-resistant TB treatment	High-dose isoniazid	16–20			
	Linezolid	600 mg twice daily, but recent data suggest 300 mg twice daily or 600 mg or 300 mg may be effective (see text – New drugs)			
	Amoxicillin/clavulanate	Dosage for DR-TB not well defined. Normal adult dose 875/125 mg twice daily or 500/125 mg three times daily. Higher dose limited by adverse effects			
	Clarithromycin	500 mg twice daily			
	Thioacetazone	150 mg daily (Contraindicated in HIV-infected patients)			
	Imipenem/cilastatin	Usual adult dose 500–1000 mg IV 6-hourly			

DST, drug susceptibility testing.
*Cannot rely on DST – use as additional drug if DST result susceptible or not performed.
†Choose one drug in each of these groups; amikacin preferred to kanamycin in children.
‡Choose one or more of these drugs to make up total of four new drugs.
§Consider use of these drugs if insufficient drugs to build an acceptable regimen with previous groups. Linezolid dosage for TB is still uncertain. Thioacetazone should not be used in HIV-infected patients.

Failure of therapy and re-treatment regimens

Failure of therapy is associated with drug resistance, poor drug compliance or insufficient treatment duration (Sonnenberg et al.) Data from a large retrospective cohort (>5550 cases)

Have provided evidence that standard short-course chemotherapy, based on first-line drugs, was inadequate to treat patients with MDR-TB (Espinal et al. 2000). The Category II re-treatment (regimen 2: INH-EMB-RMP-PZA-SM)/1(INH-EMB-RMP-PZA)/5(INH-EMB-RMP) recommended by WHO is inadequate for settings with a high proportion of MDR-TB.

Table 3 Important adverse effects of second-line anti-tuberculosis drugs

Second-line drug	Adverse clinical effect*	Tests to monitor routinely
Amikacin Kanamycin Capreomycin	Ototoxicity (cumulative dose important) Nephrotoxicity	Audiology (hearing test) – monthly if possible Serum creatinine and potassium levels – monthly, high-risk patients more often
Fluoroquinolones	Gastrointestinal disturbance Insomnia Arthralgia	Clinical observation Serum uric acid if used with pyrazinamide
Ethionamide (or protionamide)	Gastrointestinal disturbance Hepatotoxicity Hypothyroidism	Clinical observation. Prevent by initially splitting dose or increasing dose (drug ramping) Jaundice – serum alanine transferase and bilirubin Thyroid-stimulating hormone levels (free T4) – at least 6-monthly
Cycloserine (or terizidone)	Psychosis, seizures, paresthesia, depression	Clinical observation – all patients to receive preventive pyridoxine
Para-aminosalicylic acid (PAS)	Gastrointestinal disturbance Hypothyroidism	Clinical observation Thyroid-stimulating hormone levels (free T4) – at least 6-monthly
Linezolid	Myelosuppression or thrombocytopenia Lactic acidosis Peripheral neuropathy Pancreatitis (Abdominal pain) Optic neuritis Drug interaction with MAOIs	Full blood count and platelets – weekly at first then monthly Serum lactate level Symptoms of tingling and numbness Clinical and serum amylase as indicated Vision testing Exclude use of monoamine oxidase inhibitors

*Adverse effects of first-line dugs and antiretroviral drugs in HIV-infected patients often

Key messages on multidrug-resistant (MDR-TB) and extensively drug-resistant (XDR-TB) tuberculosis

---

WHO estimates that 440 000 MDR-TB cases occured globally in 2008 and the spread of MDR-TB now threatens gains made in TB control

Recent data from South Africa show MDR-TB and XDR-TB are important causes of death in both HIV-infected and HIV-non-infected individuals

Drug-resistant TB should be suspected in patients who fail to respond to the intensive phase of standard short-course therapy, have had TB previously, have a history of poor compliance, are known contacts of patients with drug-resistant TB.

Treating MDR-TB patients using Category II regimens also runs the risk of further amplification of drug resistance.

Surgical treatment for MDR-TB and XDR-TB

The role of surgery in the management of extensive pulmonary involvement in MDR-/XDR-TB re-

mains controversial. Surgical resection of infected lungs tissue has been reported to be a useful strategy in the treatment of MDR-TB and XDR-TB. While some studies reported that surgery was associated with a better outcome (Chiang et al. 2001, Somocurcio et al. 2007)
Others found no additional benefit of surgery in the treatment of MDR-TB. Further studies are necessary to evaluate the role of artificial pneumothorax in treating MDR-/XDR-TB cases.

New technological advances for rapid diagnostics for MDR-TB
Current DST testing laboratory methods take a few weeks before the results are available, the need for rapid identification of drug-resistant TB is great. Newer molecular-based diagnostic Technologies for rapid identification of drug-resistant genes from patients sputum samples, albeit very expensive presently, have been recently introduced. These show promise for early diagnosis and rapid institution of effective chemotherapy. Gene Xpert is a user-friendly „closed“ system nested real-time PCR assay that enables a rapid confirmation of TB and also simultaneously determines susceptibility to RMP.

Newer anti-TB drugs pipeline and drug regimens
The global Alliance for TB drug development has a number of drugs in the pipeline. These will soon be evaluated in good clinical practices (GCP) randomised controlled clinical trials for their to shorten the duration of anti-TB chemotherapy, to test their effectiveness for use in patients with drug-resistant TB. The diarylquinoline Tibotec Medical Compound (TMC)207. Other promising bactericidal and potentially sterilising compounds currently evaluated in phase 1 trials and Early Bactericidal Activity (EBA) studies are the two nitroimidazoles, PA-824 (nitroimidazo-oxazine) and OPC-67683 (dihydroimidazo-oxazole), sudoterb (pyrrole LL-3858 and an EMB derivative (diamine SQ109).

Association of Serotype with Risk of Death Due to pneumococcal pneumonia: A Meta-Analysis, Daniel M. Weinberger, Clinical Infectious Diseases 2010, 51(6):692-699
Significant differences were found in the RR estimates among serotypes in patients with bacteremic pneumonia. Overall, serotypes 1,7F, and 8 were associated with decreased RRs, and serotypes 3, 6A, 6B, 9N, and 19F were associated with increased RRs. Outcomes among meningitis patients did not differ significantly among serotypes. Serotypes with increased RRs had a high carriage prevalance, had low invasiveness, and were more heavily encapsulated in vitro.
These results suggest that IPD outcome, like other epidemiologic measures, as a stable serotype-associated property.

Recurrence after Treatment for Pulmonary Multidrug-Resistant, Tuberculosis., Mercedes C. Becerra
We estimated the proportion of recurrence within 2 years among adults cured by individualized multidrug-resistant tuberculosis regimens in Peru. Among 310 individuals with at least 24 month of follow-up, 16 experienced an episode of recurrent tuberculosis. If we assume the worst for treatment effectiveness – that all 16 episodes were caused by the original tuberculosis strain-then 5.2 % (95% confidence interval, 3.0%-8.2%) experienced true relapse. This is an upper-bound estimate of relapse on which new regimens must improve.

Influenza as a trigger for acute myocardial infarction or death from cardiovascular disease: a systematic review
The Lancet Infectious Diseases, Volume 9, Issue 10
Cardiac complications of influenza infection, such as myocarditis, are well recognised, but the role

of influenza as a trigger of acute myocardial infarction is less clear. We did a systematic review of the evidence that influenza (including influenza-like illness and acute respiratory infection) triggers acute myocardial infarction or cardiovascular death. We examined the effectiveness of influenza vaccines at protecting against cardiac events and did a meta-analysis of data from randomised controlled trials. 42 publications describing 39 studies were identified. Many observational studies in different settings with a range of methods reported consistent associations between influenza and acute myocardial infarction. There was weaker evidence of an association with cardiovascular death. Two small randomised trials assessed the protection provided by influenza vaccine against cardiac events in people with existing cardiovascular disease. Whereas one trial found that influenza vaccination gave significant protection against cardiovascular death, the other trial was inconclusive. A pooled estimate from a random-effects model suggests a protective, though non-significant, effect (relative risk 0•51, 95% CI 0•15—1•76). We believe influenza vaccination should be encouraged wherever indicated, especially in people with existing cardiovascular disease, among whom there is often suboptimum vaccine uptake. Further evidence is needed on the effectiveness of influenza vaccines to reduce the risk of cardiac events in people without established vascular disease.

Tuberculosis and air travel: a systematic review and analysis of policy, The Lancet Infectious Diseases, Volume 10, Issue 3, Pages 176 - 183, March 2010

WHO international guidelines for the control of tuberculosis in relation to air travel require - after a risk assessment - tracing of passengers who sat for longer than 8 h in rows adjacent to people with pulmonary tuberculosis who are smear positive or smear negative. A further recommendation is that all commercial air travel should be prohibited until the person has two consecutive negative sputum smears for drug-susceptible tuberculosis or two consecutive cultures for multidrug-resistant tuberculosis.

Only two studies reported reliable evidence of transmission. The analysis suggests that there is reason to doubt the value of actively screening air passengers for infection with Mycobacterium tuberculosis and that the resources used might be better spent addressing other priorities for the control of tuberculosis.

Biomarkers for tuberculosis disease activity, cure, and relapse, The Lancet Infectious Diseases, Volume 9, Issue 3, Pages 162 – 172

Candidate biomarkers should differentiate people with active tuberculosis from healthy individuals, normalise with therapy, and reproducibly predict clinical outcomes in diverse patient populations. Although a large number of promising candidate biomarkers have been examined to date, few patients in these studies have reached clinically meaningful outcomes, and few of the studies have been conducted to international research standards. These markers must be further studied in tuberculosis treatment trials to evaluate the kinetics of the responses and their relation to long-term clinical outcomes. These studies will benefit from multidisciplinary collaborations including microbiologists, immunologists, clinicians, tuberculosis control personnel, and the pharmaceutical and biotechnology industry.

The real threat of Klebsiella pneumoniae carbapenemase-producing bacteria., The Lancet Infectious Diseases, Volume 9, Issue 4, Pages 228 – 236

From early this decade, Enterobacteriaceae that produce Klebsiella pneumoniae carbapenemases (KPC) were reported in the USA and subsequently worldwide. These KPC-producing bacteria are predominantly involved in nosocomial and systemic infections; although they are mostly Enterobacteriaceae, they can also be, rarely, Pseudomonas aeruginosa isolates. KPC β lactamases

(KPC-1 to KPC-7) confer decreased susceptibility or resistance to virtually all β lactams. Carbapenems (imipenem, meropenem, and ertapenem) may thus become inefficient for treating enterobacterial infections with KPC-producing bacteria, which are, in addition, resistant to many other non-β-lactam molecules, leaving few available therapeutic options. Detection of KPC-producing bacteria may be difficult based on routine antibiotic susceptibility testing. It is therefore crucial to implement efficient infection control measures to limit the spread of these pathogens.

Evaluation of the routine use of amoxicilin as part of the home-based treatment of severe acute malnutrition, Tropical Medicine and International Health, Vol. 15, No9, sept 2010, pp1022-1028

The aim of study was to determine whether the inclusion of amoxicillin correlates with better recovery rates in the home-based treatment of severe acute malnutrition with ready-to-use therapeutic food. The recovery rate for children treated who received amoxicillin was worse at 4 weeks (40%vs. 71%) but similar after up to 12 weeks of therapy (84% vs. 86%), compared to the children treated without antibiotics. This review of two therapeutic feeding programmes suggests that children with severe acute malnutrition who were treated without amoxicillin did not have inferior rate of recovery.

Incidence of pneumonia, bacteremia, and invasive pneumococcal disease in Pakistan children, Tropical Medicine and International Health, Vol. 15, No9, sept. 2010, pp 1029-1036

Objective To determine the incidence of pneumonia, bacteremia and invasive pneumococcal disease (IPD) in Pakistan children <5 years old.

There were 1039 clinical cases of pneumonia, of which 54 were severe pneumonia and four cases of very severe disease according to WHO criteria. The overall pneumonia incidence was 0,26 (95% CI: 0,25-0,28) episodes per child-year. A pathogen was isolated from the blood of 29 (2,8%) pneumonia cases. Bacteremia incidence was 912 (95% CI: 648-1248) episodes per 100 000 child-years. The under-five mortality rate was 55 per 1 000 live births, with pneumonia causing 12 (22%) deaths among children <5 years old.

Conclusion Clinical pneumonia is common in Pakistan children, with one in four deaths attributable to the disease. Bacteremia occurs at a high rate but surveillance for pneumococcus underestimates the burden of IPD.

Sarfo FS, Phillips R, Asiedu K, Ampadu E, Bobi N, Adentwe E, Lartey A, Tetteh I, Wansbrough-Jones M. Clinical efficacy of combination of rifampin and streptomycin for treatment of Mycobacterium ulcerans disease. Antimicrob Agents Chemother. 2010 Sep;54(9):3678-85. Epub 2010 Jun 21.

8 weeks Rifampin 10 mg/kg and Streptomycin 15 mg/kg , 95% effect No reccomending and no surgery in 160 patients.

Clinical and epidemiologic characteristics of children hospitalized with 2009 pandemic H1N1 influenza A infection, Swati Kumar, Pediatr Infect dis J 2010, 29: 591-594

The majority of children with pandemic H1N1 influenza – associated hospitalizations had uncomplicated illness despite the frequent presence of high-risk conditions in our patient population. Laboratory – confirmed 2009 pandemic H1N1 influenza hospitalizations resulted in substantial health care and economic burden.

Implementing the delayed antibiotic therapy approach significantly reduced antibiotics consumption in Israeli children with first documented acute otitis media
Zachi Grossman
The Pediatric Infectious Disease Journal, Vol. 29, No 7, July 2010-09-27
Conclusion: Implementation of the delayed antibiotic treatment approach was associated with a significant reduction in use of antibiotics associated with first documented AOM in children aged 6 months to 5 years, reversing an upward trend that occurred previosly.

Heptavalent pneumococcal conjugate vaccine immunogenicity in very-low-birth-weight, premature infants, Carl T. D' Angio, The Pediatric Infectious Disease Journal, Vol. 29, No 7, July 2010
The heptavalent pneumococcal CRM conjugate vaccine (PCV-7) has been incompletely studied in very-low-birth-weight (≤1500 g) infants. Infants 1001 to 1500 g birth weight were more likely than those 401 to 1000 g to achieve antibody concentrations≥0,15µg/mL against the least 2 immunogenic serotypes (6B: 96% vs. 85%, P=0,003 and 23F:97% vs. 88%, P=0,009).
Conclusion: When compared with larger premature infants, infants weighing≤1000 g at birth have similar antibody responses to most but not all, PCV-7 vaccine serotypes.

Reduction in hospitalizations for pneumonia associated with the introduction of a pneumococcal conjugate vaccination Schedule without a booster dose in Australia, Andrew Jardine, Pediatr Infect Dis J 2010: 29: 607-612
A total of 523, 591 eligible hospital discharges were identified. In the 30 months following 7vPCV introduction, there were significant adjusted reductions in all-cause pneumonia in children aged<2 and 2 to 4 years of 38% (95% CI = 36% - 40%), and 29% (26% - 31%), respectively. Reductions of between 3% and 11% were observed in the older age groups.
The significant differential effects observed are strongly suggestive of the PCV7 program being responsible for the observed reduction in pneumonia hospitalizations in Australia, and the magnitude was comparable to that documented in countries with a booster dose.

Low risk of bacteremia in otherwise healthy children presenting with fever and severe neutropenia, The Pediatric Infectious Disease Journal, Vol. 29, No 7, July 2010, Carlos Pérez-Méndez
Abstract: Thirty-eight previously healthy, well-appearing children with severe neutropenia (absolute neutrophil count less than 500/mm3) and fever were analyzed. Blood cultures were negative in all cases a bacterial infection was found in 2 children and it was readily diagnosed on clinical grounds at their first visit. Antibiotic therapy was started in only 14 patients. All children recovered uneventfully.
Tuberculosis and diabetes mellitus: is vitamin D the missing link?, Adam E Handel, Dooley KE, Chaisson RE. Tuberculosis and diabetes mellitus:convergence of two epidemics. Lancet Infect Dis 2009, 9, 737-46
www.thelancet.com/infection Vol 10 September 2010

Emergence of a new antibiotic resistance mechanism in India, Pakistan and the UK: a molecular, biological and epidemiological study, Karthikeyan K Kumarasamy, Lancet Infect Dis 2010 10: 597-602
Gram-negative Enterobacteriaceae with resistance to carbapenem conferred by New Delhi metalo-ß-lactamase 1 (NDM-1) are potentially a major global health problem. We investigated the prevalence of NDM-1, in multidrug-resistant Enterobacteriaceae in India, Pakistan and the UK.

We identified 44 isolates with NDM-1 in Chennai, 26 in Haryana, 37 in the UK and 73 in other sites in India and Pakistan. NDM-1 was mostly found among Escherichia coli (36) and Klebsiella pneumoniae (111), which were highly resistant to all antibiotics except to tigecycline and colistin. K pneumoniae isolates from Haryana were clonal but NDM-1 producers from the UK and Chennai were clonaly diverse. Most isolates carried the NDM-1 gene on plasmids: those from UK and Chennai were readily transferable whereas those from Haryana were not conjugative. The CTX-M-15 extended-spectrum ß-lactamase (ESBL) encoded by bla was first reported in India in the mid-1990s. Recent surveys have identified ESBLs in 70-90% of Enterobacteriaceae in India.Already Klebsiella pneumoniae clones with KPC carbapenemase are a major problem in the USA, Greece and Israel and plasmids encoding the VIM metalo-carbapenemase have disseminated among K pneumoniae in Greece. We recently reported a new type of carbapenem resistance gene, designated bla. A patient, repatriated to Sweden after admission to hospital in New Delhi India, was colonised by K pneumoniae and Escherichia coli with bla.
Proportion susceptible – Tigecycline 64%, Colistin 89%
Enterobacteriaceae with NDM-1 carbapenemases are highly resistant to many antibiotic classes and potentially herald the end of treatment with ß-lactams fluoroquinolones and aminoglycosides – the main antibiotic classes for the treatment of Gram-negative infections. Only a few isolates remained sensitive to individual aminoglycosides and aztreonam, perhaps. Most isolates remained susceptible to colistin and tigecycline.

Young D., Toleman MA, Giske CG, et al. Characterization of a new metalo-ß-lactamase gene, bla NDM-1 and a novel erythromycin esterase gene carried on a unique genetic structure in Klebsiella pneumoniae sequence type 14 from India. Antimicrob Agents Chemother 2009, 53: 5046-54

Diagnostic approaches for paediatric tuberculosis by use of different specimen types, culture methods and PCR: a prospective case-control study, Richard A Oberhelman, Lancet Infect Dis 2010, 10, 612-20

The diagnosis of pulmonary tuberculosis presents challenges in children because symptoms are non-specific, specimens are difficult to obtain and cultures and smears of Mycobacterium tuberculosis are often negative. We assessed new diagnostic approaches for tuberculosis in children in a resource-poor country. Two specimens of each type (gastric-aspirate, naspharyngel-aspirate and stool specimens)taken from each case were examined for M tuberculosis. 218 cases and 238 controls were enrolled. Laboratory confirmation of tuberculosis was more frequent in cases at high risk for tuberculosis (one [14,1%] of 149 cases with complete specimen collection were culture positive) than in cases at moderate risk for tuberculosis (one [1,6%] of 61). MODS was more sensitive than lowenstein-jensen culture, diagnosing 20 (90,9%) of 22 patients compared with 13 (59,1%) M tuberculosis isolation by MODS was faster than by Lowenstein-Jensen culture p=0,0001. All 22 culture-confirmed cases had at least one culture positive gastric-aspirate specimen. M tuberculosis was isolated from the first gastric-aspirate specimen obtained in 16 of 22 cases, whereas in six (27,3%), only the second gastric-aspirate specimen was culture positive (37% greater yield by adding a second specimen). In cases at high risk for tuberculosis, positive results from one or both gastric-aspirate PCRs identified a subgroup with a 50% chance of having a positive culture (13 of 26 cases). Collection of duplicate gastric-aspirate specimens from high-risk chidren for MODS culture was the best available diagnostic test for pulmonary tuberculosis. PCR was insufficiently sensitive or specific for routine diagnostic use, but in high-risk children, duplicate gastric-aspirate PCR provided same-day identification of half of all culture-positive cases.

Best drug treatment for multidrug-resistant and extensively drug-resistant tuberculosis, José A Caminero, Lancet Infect Dis 2010, 10, 621-29

Multidrug-resistant (MDR) and extensively drug-resistant (XDR) tuberculosis are generally thought to have high mortality rates. The recommended regimen is the combination of at least four drugs to which the Mycobacterium tuberculosis isolate is likely to be susceptible. Drugs are chosen with a stepwise selection process through five groups on the basis of efficacy, safety and cost. Among the first group (the oral first-line drugs) high-dose isoniazid, pyrazinamide and ethanbutol are though of as an adjunct for the treatment of MDR and XDR tuberculosis. High dose levofloxacin, capreomycin, kanamycin, then amikacin. The fourth group are called the second-line drugs and should be used in the following order: thioamides, cycloserine, then aminosalicylic acid. Drugs in group five should be used in the following order: clofazimine, amoxicillin with clavulanate, linezolid, carbapenems, thioacetazone, then clarithromycin.

	Daily dose
Group one: first-line oral antituberculosis drugs (use all possible drugs)	
Isoniazid	5 mg/kg
Rifampicin	10 mg/kg
Ethambutol	15–25 mg/kg
Pyrazinamide	30 mg/kg
Group two: fluoroquinolones (use only one, because they share genetic targets)	
Ofloxacin	15 mg/kg
Levofloxacin	15 mg/kg
Moxifloxacin	7·5–10 mg/kg
Group three: injectable antituberculosis drugs (use only one, because they share very similar genetic targets)	
Streptomycin	15 mg/kg
Kanamycin	15 mg/kg
Amikacin	15 mg/kg
Capreomycin	15 mg/kg
Group four: less-effective second-line antituberculosis drugs (use all possible drugs if necessary)	
Ethionamide/Prothionamide	15 mg/kg
Cycloserine/Terizidone	15 mg/kg
P-aminosalicylic acid (acid salt)	150 mg/kg
Group five: less-effective drugs or drugs on which clinical data are sparse (use all necessary drugs if there are less than four from the other groups)	
Clofazimine	100 mg
Amoxicillin with clavulanate	875/125 mg every 12 h
Linezolid	600 mg
Imipenem	500–1000 mg every 6 h
Clarithromycin	500 mg/12 h
High-dose isoniazid	10–15 mg/kg
Thioacetazone	150 mg

Group one: first-line antituberculosis drugs

Rifampicin and others rifamycins

Three different rifamycins are commercially available: rifampicin, rifabutin and rifapentine. M tuberculosis develops resistance to all three trough a mutation in the 81 bp region of the RNA polymerase b-subunit. However, even if most of the rifampicin-resistant M tuberculosis isolates are also resistant to rifapentine, about 15-20% of them are likely to be susceptible to rifabutin.

Pyrazinamide

Pyrazinamide was widely used between 1950 and 1970 to treat patients with M tuberculosis resistant to isoniazid and streptomycin.

Ethambutol

Ethambutol has an excellent tolerability profile and resistance in treatment-naive patients with tuberculosis is very rare in most countries. Furthermore, patients with M tuberculosis resistant only to isoniazid who have initial treatment failure and become MDR are likely to remain susceptible to ethambutol.

Group two: fluoroquinolones

Cross-resistance

Initially, cross-resistance among fluoroquinolones was thought to be likely because they all target gyrA. However, analysis of the different mutations of this gene (resistance mutations in other genes, sucha s gyrB, have been described) has shown that about half of the isolates resistant ofloxacin could be susceptible to moxifloxacin and to high doses of levofloxacin.

Group three: injectable antituberculosis drugs

This group of drugs is another mainstay in the treatment of MDR and XDR tuberculosis and includes the aminoglycosides (streptomycin, kanamycin and amikacin) and the polypeptides (capreomycin and viomycin, unfortunatley viomycin is unavaileble in most countries).

Cross-resistance

40 years ago, Tsukamura reported that isolates resistant to low concentrations of kanamycin were susceptible to capreomycin and viomycin, many isolates resistant to high concentrations of kanamycin were resistant to capreomycin and isolates resistant to capreomycin were susceptible to kanamycin but resistant to viomycin.

Group four: second-line antituberculosis drugs

This group includes compounds from three classes of drugs: the thioamides (ethioamide and protionamide) cycloserine, or its derivative terizidone (a double molecule of cycloserine which has nearly the same action but is cheaper) and aminosalicylic acid.

Group five drugs

Group five drugs are a very heterogeneous group of drugs, which are poorly studied in vivo in human beings or have low effectiveness or high toxicity. Therefore, the drugs in group five are thought of as minor or adjuvant drugs, each one should be counted as only half of one of the four basic drugs needed to treat MDR and XDR tuberculosis.

Clofazimine

Co-amoxiclav

Linezolid

Carbapenems
Thioacetazone
Clarithromycin

Combination Efficacy of Combination of Rifampicin and Streptomycin for Treatment of Mycobacterium ulcerans Disease

ANTIMICROBIAL AGENTS AND CHEMOTHERAPY, VOLUME 54, NUMBER 9
Fred Stephen Sarfo
We have evaluated the clinical efficacy of the combination of oral rifampicin at 10mg/kg of body weight and intramuscular streptomycin at 15mg/kg for 8 weeks (RS8), as recommended by the WHO, in 160 PCR- confirmed cases of Mycobacterium ulcerans disease. In 152 patients (95%) with all forms of disease from early nodules to large ulcers, with or without edema, the lesions healed without recourse to surgery. Eight patients whose ulcers were healing poorly had skin grafting after completion of antibiotics. There were no recurrences among 158 patients reviewed at the 1- year follow-up. The times to complete healing ranged from 2 to 48 weeks, according to the type and size of the lesion, but the average rate of healing (rate of reduction in ulcer diameter) varied widely. Thirteen subjects had positive cultures for M. ulcerans during or after treatment, but all the lesions without further antibiotic treatment. Adverse events were rare. These results confirm the efficacy of RS8 delivered in a community setting.

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57.

NEWS IN MEDICAL, SOCIAL, NURSING AND HEALTH PROBLEMS OF AIDS

Kmit, I., Mikolasova, G., Stanova, A., Bugri, S., Tonzar, D., H. Konosova

St. Elizabeth University College, Workstation Prague,
St Mother Theresa Hospital Kibre Mengist project - Ethiopia

Abstract
Drug and administration costs limit treatment in resource-poor regions, and are a growing concern even in resource rich settings.
Initial epidemic and early response
The simian version of HIV was probably transmitted from its natural host, the chimpanzee, to man in the early to middle years of the 20th century in the west central African countries of Cameroon and Gambia.(1-6)
Shortly after gaining a deeper hold in Africa cities, HIV rapidly spread worldwide, appearing in at-risk individuals in most regions by the mid-to-late 1970s.(7-12)

Introduction
Antiretroviral drugs generally used in clinical practice

- Nucleoside and nucleotide reverse trancriptase inhibitors (NRTIs):
  tenofovir, abacavir, zidovudine, stavudine, lamivudine, emtricitabine
- Non-nucleoside reverse transcriptase inhibitors (NNRTIs):
  efavirenz, nevirapine, etravirine
- Integrase inhibitors:
  raltegravir
- Protease inhibitors:
  fosamprenavir, darunavir, lopinavir, saquinavir, (ritonavir)
- CCR5inhibitors:
  maraviroc
- Fusion inhibitors:
  enfuvirtide

Antiretroviral drugs and laboratory monitoring
Antiretroviral drug development was substantially accelerated by the development of accurate, reproducible, and inexpensive laboratory tests.

CD4 testing
The average CD4 T-cell count in uninfected adults is typically more than 500 cells per μL. Recent guidelines use the threshold of 350 cells per μL as a strong indicator for beginning antiretroviral therapy.

Quantitative viral load testing
Quantitative viral load, or concentrations of plasma HIV RNA, is measured with PCR or related methods.
Viral load is measured before antiretroviral therapy begins, but its primary value is in monitoring treatment response or failure.
Basic of antiretroviral management: when to start treatment
When is the best time to start antiretroviral therapy?
The result from observational studies and from one large randomised clinical trial in Haiti provi-

ded consistent evidence that therapy shoul be started soon in all patients presenting with CD4 T-cell count lower than 350 cells per μL.
In terms of potency, present antiretroviral regimens in treatment-naive people suppress plasma viral loads below assay detection limits in over 90% of clinical trial participants. These impressive success rates are often also seen in real world clinical use. Once viraemia is controlled for 1-2 years, virological failure is uncommon. The cost for most combination regimens approaches $ 12 000 yearly.
A final issue, also actively debated, is the possibility that treatment of a much larger portion of the HIV-infected population than at present will alter the epidemic's transmission dynamics. Antiretroviral therapy during pregnancy essentially prevents all mother-to-child transmission, and additional data suggest that treatment-mediated viral suppresssion results in striking reductions in sexual transmission of HIV.

What treatment to start
All currently recommended treatment regimens cosist of a backbone of two NRTIs and a third drug. The most popular NRTI combination is tenofovir with emtricitabine. In resource-rich regions, these two drugs are coformulated as a single once-a-day regimen. Abacavir with lamivudine is also a once daily coformulated combination in some regions but abacavir needs screening for hypersensitivity risk, has potential cardiovascular side-effects, and might be less effective than tenofovir. The third anchor drug that is paired with two NRTIs is typically either an NNRTI, a ritonavir-boosted protease inhibitor, or an integrase inhibitor.

When to switch treatment
When should therapy be changed and what should be given after first-line antiretroviral drug regimen? Initial HIV therapy is expected to succeed. Most treatment modifications results from toxic effects and to identify and replace the drug that is causing the unwanted side-effect is generally straightforward. Virological treatment failure is generally defined as persistently detectable plasma HIV RNA concentrations after 16-24 weeks of therapy.

Present translational research themes
One of the most controversial issues in the specialty is whether very low-level viral replication also contributes to viral persistence, with some evidence to support either side of the debate.
Although the typical patient shows a sustained CD4 cell increase, many treated patients reach an apparently stable plateau that is wll bellow the normal range.
In individuals, HIV suppression prevents transmission from infected women to their newborn babies, and sexual transmission in serodiscordant adults is reduced in those with lower viral loads in the absence of antiretroviral therapy. These findings suggest the possibility of HIV treatment as a part of transmission prevention.
Will there be a large epidemic of drug-resistance HIV in the future? In view of the recent development of various well tolerated drugs that are highly effective against viruses that developed resistance to the first generation of antiretroviral drugs, the number of individuals with difficult-to-treat multidrug-resistant HIV has declined substantially.

What is new in HIV/AIDS research in developing countries?
Anatoli Kamali
Tropical Medicine and International Health, vol.15 No 8 PP 975-980 August 2010.
There have also been disappointing results in HIV prevention trials such as in HIV vaccine and microbicide trials. The most recent HIV prevention research has demonstrated the effect of male

circumcision on HIV acquisition, and lack of impact of HSV-2 tretment on HIV transmission and acquisition. Use of HIV antiretroviral drugs (ARVs) for HIV prevention is a new area that has attracted interest and a number of trials are examining the effect of oral Pre-Exposure Prophylaxis on HIV acquisition and also looking at the potential of ARVs in reducing infectiousness. Progress has been made in HIV treatment, monitoring treatment efficacy and toxicity as well as evaluation of different models of ART delivery. HIV vaccine research has, however, faced most challenges despite many efforts that have been put in.

HIV prevention

The other three were the recent male circumcision trials that showed approximately 60% protection among heterosexual circumcised men.

Building on extensive epidemiological evidence if interaction between Herpes Simplex type 2 (HSV-2) and HIV infection, a few trials have recently been completed.

ARVs have also been used successfully in prevention of mother-to-child transmission (MTCT) and post-exposure prophylaxis (PEP)-

Several PrEP studies are ongoing and investigating the safety and efficacy of either daily tenofovir disoproxil fumarate (TDF) or emtricitabine (FTC)/TDF for PrEP in various populations.

Besides evaluating use of ARVs in PrEP, there is a new area of HIV prevention now being considered for the use of ARVs among HIV-infected individuals.

Another HIV prevention strategy that has attracted international interest and funding is the use of vaginal microbicides.

HIV treatment

Treatment for HIV and related opportunistic infections (OIs) has probably been one of the most successfull areas in HIV epidemic. The use of highly antiretroviral therapy has improved the survival and quality of life of HIV-infected individuals. Among those on treatment and evaluation of different models of ART delivery especially in resource-poor countries.

Prophylactic treatment of opportunistic infections

Although ART reduces the burden of OIs after restoration of the immune system, there is still a role of prophylaxis of OIs especially in settings where only a small proportion of ART-eligible patients are able to access teratment.

Monitoring ARV treatment

As roll out of ART increases in many parts of Africa, monitoring HIV treatment efficacy and toxicity events could face many challenges and data are required on which are the most cost effective monitoring strategies.

Evaluation of after ART delivery models

One of the limiting factors in ART adherence is the cost and time loss incurred by travelling to the health.

HIV vaccine research

Development of an HIV vaccine is the greatest scientific priority and best hope to end the HIV epidemic.

Septicaemia in a population-based HIV clinical cohort in rural Uganda, 1996-2007: incidence, aetiology, antimicrobial drug resistance and impact of antiretroviral therapy
B.N.Mayanja, J.Todd, P.Hughes, L.Van der Paal, J.O.Mugisha, E.Atuhumuza, P.Tabuga, D.Maher, H.Grosskurth
Tropical Medicine and International Health, vol. 15 No 6 PP 697-705 June 2010.
The overall septicaemia incidence (per 1000 pyrs) was 32,4. The commonest isolates were Streptococcus pmeumoniae and Non-typhi salmonellae. All NTS isolates were susceptible to ciprofloxacin, but resistance to cotrimoxazole and chloramphenicol was common.
Septicaemia incidence was higher in HIV-infected than in HIV-uninf ected participants, and it remained high for some time among those who started ART. Starting ART earlier at higher CD4 counts is likely to lead to lower septicaemia incidence. Both SPN and NTS, the commonest isolates, were resistant to most commonly available antimicrobials. Blood culture laboratory surveillance systems to monitor antibiotic susceptibility and inform treatment guidelines are needed in Africa.

Death rates in HIV-positive antiretroviral-naive patients with CD4 count greater than 350 cells per μL in Europe and North America: a pooled cohort observational study
Study Group on Death Rates of High CD4 Count in Antiretroviral Naive Patients
Lancet 2010; 376: 340-45.
Compared with CD4 counts of 350-499 cells per μL, death rate was lower in patients with counts of 500-699 cells per μL.
In HIV-infected ART-naive patients with high CD4 cell count, death rates were raised compared with the general population. In men who have sex with men this was modest, suggesting that a substantial proportion of the increased risk in other groups is due to confounding by other factors. Even though the increased risk is small, new studies of potential benefits of ART in this group are merited.

Randomized, Controlled Clinical Trial of Zinc Supplemenation to Prevent Immunological Failure in HIV-Infected Adults
M.K.Baum, S.Lai, S.Sales, J.Bryan Page, A.Campa
Clinical Infectious Diseases 2010; 50(12): 1653-1660.
Zinc supplementation for 18 months reduced 4-fold the likelihood of immunological failure, controlling for age, sex, food insecurity, baseline $CD4^+$ cell count, viral load, and antiretroviral therapy. Zinc supplementation also reduced the rate of diarrhea by more than half. This study demonstrated that long-term (18-month) znic supplementation at nutritional levels delayed immunological failure and decreased diarrhea over time. This evidence supports the use of zinc supplementation as an adjunct therapy for HIV-infected adult cohorts with poor viral control.

Early versus Standard Antiretroviral Therapy for HIV-Infected Adults In Haiti
Patrice Severe, and others.
N Engl Med 2010; 363:257-65.
Early initiation of antiretroviral therapy decreased the rates of death and incident tuberculosis. Access to antiretroviral therapy should be expanded to include all HIV-infected adults who have $CD4^+$ T-cell count of less than 350 per cubic millimeter, including those who live in areas with limited resources.

Maternal or Infant Antiretroviral Drugs to Reduce HIV-1 Transmission
Charles S.Chasela, and others.
N Engl Med 2010; 362:2271-81.
We evaluated the efficacy of a maternal triple-drug antiretroviral regimen or infant nevirapine prophylaxis for 28 weeks during breast-feeding to reduce postnatal transmission of human immunodeficiency virus type 1 (HIV-1) in Malawi.
The use of either a maternal antiretroviral regimen or infant nevirapine for 28 weeks was effective in reducing HIV-1 transmission during breast-feeding. (ClinicalTrials.gov number, NCT00164736.)

Protecting the Next Generation – Eliminating Perinatal HIV-1 Infection
Lynne M.Mofenson, M.D.
N Engl J Med 362; 24 Nejm.Org June 17, 2010
More than 90% of the 430 000 human immunodeficiency virus type 1 (HIV-1) infections in children each year occur in sub-Saharan Africa, where HIV-1 acquisition through breast milk accounts for more than 40% of infections. However, in Africa, breast-feeding is a cornerstone of child survival. Two randomized trials reported in this issue of the Journal show that antiretroviral regimens in breast-feeding infants or lactating mothers significantly decrease postnatal acqusition of HIV-1.

Antiretroviral Regimens in Pregnancy and Breast-Feeding in Botswana
R.L.Shapiro, and others.
N Engl J Med 2010; 362:2282-94.
We randomly assigned 560 HIV-1-infected pregnant women (CD4+ count, ≥200 cells per cubic millimeter) to receive coformulated abacavir, zidovudine, and lamivudine (the nucleoside reverse-transcriptase inhibitor group) or lopinavir-ritonavir plus zidovudine-lamivudine (the protease-inhibitor group) from 26 to 34 weeks gestation through planned weaning by 6 months post partum. A total of 170 women with CD4+ counts of less than 200 cells per cubic millimeter received nevirapine plus zidovudine-lamivudine (the observational group). Infants received single-dose nevirapine and 4 weeks of zidovudine.
The rate of virologic suppression to less than 400 copies per milliliter was high and did not differ significantly among the three groups at delivery.
All regimens of HAART from pregnancy through 6 months post partum resulted in high rates of virologic suppression, with an overall rate of mother-to-child transmission of 1,1%.

Nurse versus doctor management of HIV-infected patients receiving antiretroviral therapy (CIPRA-SA): a randomised non-inferiority trial
Ian Sanne, and others.
Lancet 2010; 376:33-40.
Nurse-monitored ART is non-inferior to doctor-monitored therapy. Findings from this study lend support to task shifting to appropriately trained nurses for monitoring of ART.

Retention of HIV-infected and HIV-exposed children in a comprehensive HIV clinical care programme in Western Kenya
Paula Braitstein, and col.
Tropical Medicine and Internetional Health, vol. 15 No 7 PP 833-841 July 2010.
There is a high rate of LTFU among these highly vulnerable children, particularly among the HIV exposed. These data suggest that HIV-infected and HIV-exposed children are at especially high risk for LTFU if they are sick or malnourished.

Peripartum nevirapine exposure and subsequent clinical outcomes among HIV-infected women receiving antiretroviral therapy for at least 12 months
Namwinga Chintu, and col.
Tropical Medicine and International Health, vol.15 No 7 PP 842-847 July 2010.
Prior nevirapine (NVP) exposure appeared to increase risk for clinical treatment failure after 12 months of follow-up, but this finding did not reach statistical significance. With growing evidence linking recent NVP exposure to virologic failure, optimized monitoring algorithms should be considered for women with starting NNRTI-based ART. The association between prior NVP exposure and improved survival has not been previously shown and may be a result of residual confounding around health-seeking behaviours.

Low CD4+ T Cell Count Is a Risk Factor for Cardiovascular Disease Events in the HIV Outpatient Study
Kenneth A.Lichtenstein, and others.
Clinical Infectious Diseases 2010; 51 (4): 435-447.
In the multivariable case-control analyses, traditional CVD risk factors and latest CD4+ cell count<500 cells/mm^3, but not cumulative use of ARV class orindividual drug, were associated with higher odds of experiencing CVD events.
CD4+ count<500 cells/mm^3 is an independent risk factor for incident CVD, comparable in attributable risk to several traditional CVD risk factors in the HIV Outpatient Study cohort.

Cost-Effectiveness of Serum Cryptococcal Antigen Screening to Prevent Deaths among HIV-Infected Persons with CD4+ Cell Count ≤100 Cells/μL Who Start HIV Therapy in Resource-Limited Settings
David B.Meya, and others.
Clinical Infectious Diseases 2010; 51(4): 448-455.
Integrating CRAG screening into HIV care, specifically targeting people with severe immunosuppression (CD4+ cell count ≤100 cells/μL) should be implemented in treatment programs in resource-limited settings. ART alone is insufficient treatment for CRAG-positive persons.

Rate of $CD4^+$ Cell Count Increase over Periods of Viral Load Suppression: Relationship with the Number of Previous Virological Failures
Maria Paola Trotta, and others.
Clinical Infectious Diseases 2010; 51(4): 456-464.
Subjects with ≥1 virological failure took a longer time to reach a $CD4^+$ cell count >300 cell/mm^3 and had a slower annual increase than those without virological failure. Efforts should be made to optimize first-line cART, because this represents the best chance of achieving an effective $CD4^+$ response.

Systematic Review and Meta-analysis: Renal Safety of Tenofovir Disoproxil Fumarate in HIV-Infected Patients
Ryan D.Cooper, N.Wiebe, N. Smith, P.Keiser, S.Naicker, M.Tonelli.
Clinical Infectious Diseases 2010; 51(4): 496-505.
Although TDF use was associated with a statistically significant loss or renal function, the clinical magnitude of this effect was modest. Our findings do not support the need to restrict TDF use in jurisdictions where regular monitoring of renal function and serum phosphate levels is impractical.

Clinical Impact and Cost of Monitoring for Asymptomatic Laboratory Abnormalities among Patients Receiving Antiretroviral Therapy in a Resource-Poor Setting
S.P.Koenig, B.R.Schackman, C.Riviere, P.Leger, M.Charles, P.Severe, Ch.Lastimoso, N.Colucci, J.W.Pape, D.W.Fitzgerald.
Clinical Infectious Diseases 2010; 51(5): 600-608.
We conducted a cohort study of the 1800 adult patients who initiated ART at the Haitian Study Group for Kaposi's Sarcoma and Opportunistic Infections (GHESKIO) in Haiti from 2003 to 2006. Monitoring for asymptomatic anemia with hematocrit testing was cost-saving at baseline and hah a cost-effectiveness ratio of US$317/DALY averted during follow-up; with a complete blood count, costs increased to US$1182 and $10,781/DALY averted. With glucose monitoring, 11 patients were diagnosed with new-onset hyperglycemia during follow-up (incidence, 0,7 cases/100 person.years), resulting in a cost-effectiveness ratio of US$9845 per DALY averted. Monitoring for asymptomatic hepattitis and renal insufficiency was expensive and rarely affected care.
Resource-poor countries should select which laboratory tests to perform on the basis of the cost-effectiveness of each test. This will depend on the national ART drug regimen and the prevalence of other comorbidities. Routine monitoring with multitest hematological and chemistry panels is unlikely to best cost-effective.

Is It Safe to Discontinue Primary Pneumocystis jiroveci Pneumonia Prophylaxis in Patients with Virologically Suppressed HIV Infection and a CD4 Cell Count <200 Cells/μL?
The Opportunistic Infections Project Team of the Collaboration of Observational HIV Epidemiological Research in Europe (COHERE).
Clinical Infectious Diseases 2010; 51(5): 611-619.
The incidence of primary PcP among patients who had virologically suppressed HIV infection, were receiving cART, and who had CD4 cell counts >100 cells/μL was low irrespective of prophylaxis use. Discontinuation of prophylaxis may be safe in patients with CD4 counts of 101-200 cells/μL and suppressed viral load.

Minority Variants of Drug-Resistant HIV
Sara Gianella, Douglas D.Richman
The Journal of Infectious Diseases 2010;202(5): 657-666.
Minor drug-resistant variants exist in every patient infected with human immunodeficiency virus (HIV). Because these minority variants are usually present at very low levels, they cannot be detected and quantified using conventional genotypic and phenotypic tests.
Natural history of drug-resistance mutations in the absence of therapy
The existence of minority variants with DRMs in the absence of drug exposure is a common theme in microbiology. Luria and Delbruck (24) first described the rare generation of resistant variants of bacteria in 1943. The clinical relevance of rare drug-resistant populations of Mycobacterium tuberculosis formed the rationale for combination therapy in the 1950s.
Acquired drug-resistance mutations
Acquired drug-resistance is generated from a background of transmitted drug-susceptible virus. The wild-type virus and the progressively more resistant viruses that evolve under the ongoing selective presure of drug treatment are archived in the latent reservoir.
Transmitted drug-resistance mutations
Since the first report of primary infection with a zidovudine-resistant virus in 1993, numerous reports have described the transmission of drug-resistant viral variants.

Effect of treating co-infections on HIV-1 viral load: a systematic review
Kayvon Modjarrad, Sten H.Vermund
Lancet Infect Dis 2010; 10: 455-463.

Co-infections contribute to HIV-related pathogenesis and often increase viral load in HIV-infected people. We did a systematic review to assess the effect of treating key co-infections on plasma HIV-1-RNA concentrations in low-income countries. We identified 18 eligible studies for review: two on malaria, six on helminths, and eight on sexually transmitted infections, excluding untreatable or non-pathogenic infections. Standardised mean plasma viral load decreased after the treatment of co-infecting pathogens in all 18 studies. The standardised mean HIV viral-load difference ranged from -0.04 $\log_{10}$ copies per mL (95% CI-O.24 to 0.16) after syphilis treatment to -3.47 $\log_{10}$ copies per mL (95% CI-3.78 to -3.16) after tuberculosis treatment. Of 14 studiers with variance data available, 12 reported significant HIV viral-load differences before and after treatment. Although many of the viral-load reductions were 1.0 $\log_{10}$ copies pel mL or less, even small changes in plasma HIV-RNA concentrations have been shown to slow HIV progression and could translate into population-level benefits in lowering HIV transmission risk.

In a US cohort of HIV-infected adults with culture-positive Mycobacterium tuberculosis, Goletti and colleagues noted that HIV-RNA concentrations increased by 0.7-2.2 $\log_{10}$ copies per mL during the acute phase of infection, and decreased by a similar order of magnitude at 3 months and 10 months after therapy. Despite a small sample size (n=10), the variability of viral-load measurements was relatively small. Similar results, but of smaller magnitude, were found in the study by Kizza and colleagues, in which viral-load declined by 0.5 $\log_{10}$ copies per mL at 6 months after successful completion of tuberculosis therapy, but only 0.2 $\log_{10}$ copies per mL when compared with 12-month follow-up timepoints.

In a prospective study of 47 HIV-infected Malawians, Hoffman and colleagues found that median HIV-RNA concentrations in the plasma of malaria-infected patients were 0.83 $\log_{10}$ copies per mL higher than those of individuals without smear-positive malaria. The change in plasma viral-load also differed between the two groups: co-infected patients had a 0.25 $\log_{10}$ copies per mL reduction compared to a 0.04 log?? copies per mL increase among controls. Kublin and colleagues noted a cmparatively smaller reduction in viral load with successful malaria elimination (-0.10 $\log_{10}$ copies per mL), but a nearly identical standardised viral-load reduction (-0.30 $\log_{10}$ copies per mL) to that reported by Hoffman and colleagues.

Wolday and colleagues found that treatment of enteric helminth infection was associated with a 0.36 $\log_{10}$ copies per mL decline in HIV plasma viral load in co-infected individuals, and thatmean baseline plasma HIV-RNA concentrations were associated with the intensity of helminth infection. A viral-load increase of 0.14 $\log_{10}$ copies per mL in the control group and a narrow variance of that change showed a -2.10 $\log_{10}$ copies per mL SMD. Much more modest reductions in viral-load (<0.2 $\log_{10}$ copies per mL) with anthelmintic treatment were seen in subsequent studies. Among these four studies, more than 90% of study participants were infected with one or more of the following helminth species: Ascaris lumbricoides, Trichuris trichiura, Necator americanus, and Ancylostoma duodenale. Two randomised trials that assessed the interaction between HIV and other types of helminths (schistosomes and filaria) showed a larger effect of 0.4 $\log_{10}$ copies per mL and 0.8 $\log_{10}$ copies per mL viral-load reduction after successful helminth clearance.

Six studies reported on the effect of HSV suppression on plasma HIV-RNA concentrations. SMDs indicated that herpes suppression significantly reduces HIV viral load by 0.46-1.18 $\log_{10}$ copies per mL. Variance data were not available from two studies to calculate a true SMD. However, the published results showed significant declines of O.14 $\log_{10}$ copies per mL and 0.25 $\log_{10}$ copies per mL respectively, with HSV suppressive therapy.

Among a group of female sex workers in Kenya, plasma HIV-RNA concentrations decreased over

the course of several months by 0.16 $\log_{10}$ copies per mL among those presenting with various sexually transmitted diseases (ie, gonococcal cervitis , acute pelvic inflammatory disease, and genital herpes) and decreased over the same time period by 0.06 $\log_{10}$ copies per mL in sex workers with no apparent co-infection. Sadiq and colleagues found that HIV-RNA concentrations in both plasma compartments initially decreased with syphilis infection, but then increased almost to baseline after treatment.
By contrast, treatment of other viarl co-infections (eg.hepatitis C virus, cytomegalovirus, and measles) might be less likely to result in reductions in plasma HIV viral load than examples presented thus far. Although studies have suggested that hepatitis C virus co-infection accelerates the natural course of HIV, the evidence is not strong enough for an association between hepatitis C virus infection and changes in surrogate markers of HIV disease progression. Other viruses have been shown to enhance, suppress, or have no effect on HIV replication, suggesting that the mechanism by which HIV and other viruses interact is likely to be multifactorial and species specific.

Risk of resistance to highly active antiretroviral therapy among HIV-positive injecting drug users: a meta-analysis
Daniel Werb, Edward J.Mills, Julio S.G.Montaner, Evan Wood
Lancet Infect Dis 2010; 10: 464-469.
Thus we included 12 studies in the meta-analysis, involving 9055 patients, of which 2054 (23%) were injecting drug users (IDUs). The risk of development of antiretroviral resistance did not differ significantly between IDU and non-IDU (odds ratio 1.04,95%CI 0.74-1.45, p=0.84). Rates of loss to follow-up and virological failure were similar in IDU and non-IDU samples. Existing evidence does not support the common practice of withholding antiretroviral therapy from HIV-positive IDU on the basis of an elevated risk of antiretroviral resistance. Therapeutic guidelines should consider reassessment of this issue.

HIV-associated psoriasis: pathogenesis, clinical features, and management
Nilesh Morar, Saffron A.Willis-Owen, Toby Maurer, Christopher B.Bunker
Lancet Infect Dis 2010; 10: 470-478.
Phenotypic variants such as a Reiter's syndrome or fulminant erythroderma provide diagnostic clues to underlying immunodeficiency. The management of moderate and severe HIV-associated psoriasis is challenging, although patients typically improve with highly active antiretroviral therapy.

Dysfunctional B-cell responses during HIV-1 infection: implication for influenza vaccination and highly active antiretrovival therapy
Alberto Cagigi, Anna Nilson, Simone Pensieroso, Francesca Chiodi
Lancet Infect Dis 2010; 10: 499-503.
Impaired B-cell responses during HIV infection could therefore hamper the effectiveness of vaccinations against seasonal influenza or the new pandemic influenza A H1N1 vaccines in individuals with HIV. By maintaining B-cell responses, highly active antiretroviral therapy might improve the efficacy of influenza vaccines in individuals with HIV.
Studies in adults and children infected with HIV have clearly indicated that HAART has an important role in maintaining robust B-cell immune responses to seasonal influenza vaccines and other infections. Therefore, in patients with HIV, high antibody titres in response to the new influenza A H1N1 vaccines will most likely be achieved in those who are receiving HAART, which leads to contained virus replication, high numbers of CD4 T cells, and reduced polyclonal B-cell activation.

Prognosis of patients with HIV-1 infection starting antiretroviral therapy in sub-Saharan Africa: a collaborative analysis of scale-up programmes
Margaret May PhD.
Lancet 2010, 376:449-57
We analysed data for adult patients who started ART in four scale-up programmes in Côte d'Ivoire, South Africa, and Malawi from 2004 to 2007
Mortality was strongly associated with high baseline CD4 cell count (≥200 cells per mL vs <25; adjusted hazard ratio 0•21, 95% CI 0•17—0•7), WHO clinical stage (stages III—IV vs I—II; 3•45, 2•43—4•90), bodyweight (≥60 kg vs <45 kg; 0•23, 0•18—0•30), and anaemia status (none vs severe: 0•27, 0•20—0•36). Other independent risk factors for mortality were low total lymphocyte count, advanced age, and male sex. Probability of death at 1 year ranged from 0•9% (95% CI 0•6—1•4) to 52•5% (43•8—61•7)

Central Asia: hotspot in the worldwide HIV epidemic
Lancet Infect. Dis 2010
The HIV epidemic in central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan) has accelerated since 2000. This expansion in the epidemic is largely attributable to escalating injection drug use, reflecting central Asia's geographic position along major drug trafficking routes. Although up to 75% of cumulative HIV cases have been among injection drug users (IDUs) so far, HIV infections are increasing in other population groups, including female sex workers and their clients, prisoners, and migrants. Among IDUs, risky injecting practices are highly prevalent, and the intersecting epidemic of sexually transmitted infections, particularly syphilis, highlights the potential for sexual transmission of HIV to bridging populations. Few HIV cases in children have been reported so far, with most resulting from nosocomial outbreaks in hospital settings. Some recent progress has been made towards scaling-up prevention, treatment, and care services, including harm reduction for IDUs, although key challenges remain.
Antiretroviral prophylaxis

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
Infant mortality rate per 1000 livebirths	62 - 63	58 - 61	91	74 - 80	57 - 62
Life expectancy at birth (years)	66	66	66	63	67
Population annual growth rate (%, 1990 – 2006)	-0,5	1.1	1.4	1.8	1.7
Human Development Index ranking	73	116	122	109	113
Gross national income per head (US$)	3790	490	390	1340	610

Table1: Sociodemographic, economic, and health indicators in central Asian

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
Estimated adult HIV prevalence (%,2007)	0.1	0.1	0.3	<0.1	0.1-0.2
UNAIDS estimate of number of PLHIV(2007)	12 000	4 200	10 000	<500	16 000
Estimated cumulative number of PLHIV(start2009)	14 200	4 200	8 000	<500	16 000
HIV cases officially reported in 2007	1 979	409	399	-	3 169

Table2: The HIV epidemic in central Asia – key data

UNAIDS low to high estimates of proportion of coverage of pregnant women infected with HIV
Kazakhstan: >95%
Kyrgyzstan: 2-8%
Tajikistan: 5-19%
Uzbekistan: 17-74%

ART for women needing treatment
96% of pregnant women infected with HIV were assessed for ART eligibility in Kazakhstan

Mother-to-child transmission of HIV-2 infection from 1986 to 2007 in the ANRS French perinatal cohort EPF-CO1
M. Burgard
Clinical Infectious Diseases 2010, 51(7):833-843
Management of pregnant women with human immunodeficiency virus (HIV) type 2 infection remains unclear because of its low prevalence and important differences from HIV-1. Care for HIV-2-infected pregnant women rests on expert opinion. The mother-to-child transmission residual rate (0,07%-2,2%) argues for systematic treatment: protease inhibitor-based HAART for women requiring antiretroviral therapy or for primary infection and simplified prevention of mother-to-child transmission in other instances.

Undiagnosed HIV infection among adolescents seeking primary health care in Zimbabwe
Rashida A. Ferrand
Clinical Infectious Diseases 2010, 51(7):844-851

Mother-to-child transmission of human immunodeficiency virus (HIV) infection was extremely common in southern Africa.
Five hundred ninety-four participants were systematically recruited (97% participation), of whom 88 (15%) wereattending for antenatal care. HIV infection prevalence was higher among APC attendees than among antenatal care attendees (17% vs 6%, P<.007), but for the prevalence of HSV-2 infection a marker of sexually acquired HIV, the converse was true (4% vs 14%, P<.002). Seventy (81%) of 86 HIV-positive APC attendees were previously undiagnosed. They had a broad range of presenting complaints, with a median CD4 cell count of 329 cells/mL (interquartile range, 176-485 cells/μL) and a high prevalence of stunting, compared with the corresponding prevalence among HIV-negative attendees (40% vs 12%, P<.001). Maternal transmission was considered to be likely by 69 (80%) of the 86 HIV-positive APC attendees, only one of whom was HSV-2 positive.
Unrecognized HIV infection was a common cause of primary care attendance. Routine HIV counseling and testing implemented at the primary care level may provide a simple and effective.

Rethinking prevention of HIV type 1 infection
Research on the prevention of human immunodeficiency virus (HIV)-1 infection is at a critical juncture. Major methodological challenges to performing prevention trials have emerged, and one after another promising biomedical interventions have failed to reduce the incidence of HIV-1 infection. Nevertheless, there is growing optimism that progress can be achieved in the near term. Mathematical modeling indicates that 2 new strategies, „test and treat“ and preexposure prophylaxis, could have a major impact on the incidence of HIV-1 infection. Will our hopes be justified? We review the potential strengths and limitations of those antiretroviral „treatment as prevention“ strategies and outline other new options for reducing the incidence of HIV-1 infection in the near term.

Treatment as prevention
Treatment as prevention is not a new concept. „Treatment is Prevention“ was a popular slogan for tuberculosis >20 years ago, and models were constructed to use this strategy to improve tuberculosis control in Africa and elsewhere (15-18). Multiple studies have shown that treatment can reduce the incidence of sexually transmitted infections other than HIV-1 infection (19).

Observational studies have supported these findings. In a recent meta-analysis of 11 cohort studies, HIV-1 transmission was 92% lower among couples in whom the index partner was taking ART (0,46 vs. 5,64 cases per 100 person-years) [23]
HIV-1 infection can be reduced by inplementation and treat strategy. I tis unlikely, however, that we will to eliminate the epidemic by treatment alone. We must also protect high-risk uninfected person from HIV-1 acquisition.
Five ongoing clinical trials are examining the impact of oral and/or vaginal tenofovir or emtricitabine-tenofovir. (Truvada, Gilead) on the aquisition of HIV-1 infection in various high risk population. The results of a recently completed efficacy trial, CAPRISA 004, have now been reportred. [14]
The effectiveness of PrEP will be limited by acceptability, adherence, and other factors.
Mwenya DM, Charalambous BM, Phillips PP, Mwansa JC, Batt SL, Nunn AJ, Walker S, Gibb DM, Gillespie SH.: Impact of cotrimoxazole on carriage and antibiotic resistance of Streptococcus pneumoniae and Haemophilus influenzae in HIV-infected children in Zambia. Antimicrob Agents Chemother. 2010 Sep;54(9):3756-62. Epub 2010 Jun 28.
No significant increase/decrease of Carriage oh Hi, SP Streptococcus pneumoniae but not Haemophilus influenzae resistance increased ($p<0.001$) COT in prophylaxis increases the COT in Streptococcus pneumoniae. Resistance in Streptococcus pneumoniae (50 – 60% - High baseline – resistance).

Reuse of Nevirapine in exposed HIV-infected children after protease inhibitor-based viral suppresion
Ashraf Coovadia
JAMA, Sept.8, 2010, Vol. 304, No.10
Protease inhibitor (PI)-based therapy is recommended for infants infected with human immunodeficiency virus (HIV) who were exposed to nevirapine for prevention of mother-to-child HIV transmission and reuse of nevirapine has many advantages. To test wheter nevirapine-exposed infants who initially achieve viral suppression with PI-based therapy can maintain viral suppression when switched to nevirapine-based therapy. Among HIV-infected children previously exposed to nevirapine, switching to nevirapine-based therapy after achieving viral suppression with a ritonavir boosted lopinavir regimen resulted in lower rates of viremia greater than 50 copies/mL than maintaining the primary ritonavir-boosted lopinavir regimen.

Clinical characteristics and 30-day outcomes for influenza a 2009 (H1N1), 2008-2009 (H1N1), and 2007-2008 (H3N2) infections
Edward A. Belongia
JAMA, Sept 8, 2010, Vol.304, No.10
The clinical characteristics of pandemic 2009 influenza A(H1N1) infections have not been compared directly with illnesses caused by other influenza A strains. To compare clinical features and outcomes for 2009 H1N1, seasonal H1N1 and H3N2 influenza in a population-based cohort. In this population, individuals with 2009 H1N1 infection were younger than those with H3N2. The risk of most serious complications was not elevated in adults or children with 2009 H1N1 compared with recent seasonal strains.

Impact of Cotrimoxazole on Carriage and Antibiotic Resistance of Streptococcus pneumoniae and Haemophilus influenzae in HIV- Infected Children in Zambia
ANTIMICROBIAL AGENTS AND CHEMOTHERAPY, VOLUME 54, NUMBER 9
Darlington M. Mwenya
In H. influenzae cotrimaxazole decreased switching from carriage to no carriage ($P = 0.02$).

Cotrimoxazole resistance levels were higher in postbaseline samples in the cotrimoxazole arm than in the placebo arm (S. pneumoniae, P < 0.0001, H.influenzae, P = 0.005).Cotrimoxazole decreased switching from cotrimoxazole resistance to cotrimoxazole sensitivity in S.pneumoniae (P= 0.002) and reduced the chance of H.influenzae remaining cotrimoxazole sensitive (P = 0.05). No associations were observed between the percentage of CD4 (CD4%), the change in CD4% from baseline, child age at date of specimen, child gender, or sampling month with carriage of either pathogen.

Do children infected with HIV receiving HAART need to be revaccinated?
Catherine G Sutcliffe
Lancet Infect Dis 2010, 10, 630-42
No official recommendations have been made on whether children infected with HIV on highly active antiretroviral therapy (HAART) should be revaccinated: We reviewed published work to establish whether these children have protective imunity to vaccine-preventable diseases and to assess short-term and long-term immune responses to vaccination of children given HAART. In general, children on HAART had low levels of imunity to vaccines given before treatment. Most children on HAART, however, responded to revaccination, although immune reconstitution was not sufficient to ensure long-term imunity for some children. These results suggest that children on HAART would benefit from revaccination, but levels of protective imunity might need to be monitored and some children might need additional vaccine doses to maintan protective imunity. Vaccination policies and strategies for children infected with HIV on HAART should be developed in regions of high HIV prevalence to ensure adequate individual and population imunity.

Vaccine	New vaccine?
Tetanus	No
Diphtheria	No
Pertussis	No
Haemophilus influenzae	No
Hepatitis A virus	No
Influenza virus	No
Pneumococcus	No
Replicating vaccines	
Measles	No
Mumps	No
Rubella	No
Varicella zoster virus	Yes
Influenza virus	No

Table 3: **Studies reporting immune response to vaccination while receiving HAART**

Panel: Study findings and implications for revaccination of children infected with HIV on HAART
Findings
Children on HAART generally have low imunity to childhood vaccines received before starting HAART
Children on HAART generally mount good antibody and lymphoproliferative responses to revaccination during therapy
Children vaccinated while on HAART can lose protective imunity over time
Gaps in knowledge:
The best timing of revaccination after starting HAART
The effect of age at the start of HAART on response to revaccination

Responses to primary vaccination after starting HAART
Necessity for and timing of repeat doses after revaccination while on HAART
Relation between antibody concentrations and protective imunity

Implications
HAART does not restore imunity to prior vaccination
HAART might not ensure long-lasting imunity
Children who start HAART in infancy might retain functional imunity and have better responses to vaccination
Continued effors are needed to identify and treat HIV-infected children at younger ages and earlier stages of disease

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12.** Rohde, J.: Lancet, 2008, 372, 950-964.

ANTIRETROVIRAL THERAPY FOR HIV INFECTION IN ADULTS AND ADOLESCENTS
Recommendations for public health approach 2010 revision, HIV/AIDS Programme, WHO

E. Mitterpach, H. Konosova

SEUC Nairobi

A. Summary of changes

1. **Earlier initiation of ART (antiretroviral therapy)**
   ART initiation is recommended for all PLHIV (people living with human immunodeficiency virus) with:
   - a CD4 count of ≤350 cells/mm^3 and for those with WHO clinical stage 3 or 4 irrespective of CD4 account (Tab. 2).
   - It is recommended that all patients with WHO clinical stage 1 or 2 should have access to CD4 testing to decide when to initiate treratment.
2. **Simplified, less toxic antiretroviral drugs for use in first-line and second-line therapy**
   While current options have permitted rapid ART scale-up, the cost in terms of side-effects has been considerable. There is a clear demand both from PLHIV and health-care providers to phase in less toxic ARVs while maintaining simplified fixed-dose combinations. The available evidence indicates that initial ART should contain:
   - An NNRTI (non-nucleoside reverse transcriptase inhibitors), either NVP or EFV (*nevirapin* or *efavirenz*) plus two NRTIs (nucleoside/and nucleotide analogue reverse transcriptase inhibitors), one of which should be 3TC (*lamivudine*) or FTC (*tenofovir*) and the other AZT (*zidovudine*) or TDF (*emtricitabine*)
     Countries are advised to choose one second-line regimen for individuals with first-line failure.
3. **Promoting the initiation of ART for all those with HIV/TB coinfection**
   The data demonstrate a reduction in all-cause mortality among individuals provided with TB therapy and ART
4. **Promoting improved HBV diagnosis and more effective treatment of HIV/HBV coinfection**
   Evidence supports the initiation of ART, irrespective of WHO disease stage or CD4 cell count, for all those with HIV/HBV coinfection and chronic active hepatitis B when treatment is indicated for hepatitis B.
   However, there is no agreed definition of chronic active hepatitis in resource-limited settings. There is an urgent need to develop diagnostic criteria to identify individuals with HIV/HBV coinfection who need treatment in situations where HBV DNA and liver biopsy are not routinely available.
5. **More strategic monitoring for antiretroviral efficacy and toxicity**
   While laboratory monitoring should not be a barrier to initiating ART, the newly recommended ARV regimens may require more laboratory monitoring than current regimens, especially in individuals at higher risk for adverse events.
   A phased-in approach to the use of viral load testing, if feasible, will improve the identification of treatment failure.
   In resource-limited settings, plasma viral load (HIV-RNA) measurement is not required

before the initation of ART. However, expanded access to viral load testing is needed to improve the accuracy of diagnosing treatment failure. Earlier detection of virological failure allows both targeted adherence interventions and better preservation of the efficacy of second-line regimens.

B. Recommendations at a glance

Table 1. **Current recommendations**

When to start ART	All adolescents and adults including pregnant women with HIV infection and CD4 counts of ≤350cells/mm^3, should start ART, regardless of the presence or absence of clinical symptoms. Those with severe or advance clinical disease (WHO clinical stage 3 or 4) should start ART irrespective of their CD4 cell count
What to use in first-line therapy	First-line therapy should consist of an NNRTI + two NRTIs, one of which should be zidovudine (AZT) or tenofovir (TDF). The other is FTC or 3TC, + EFV or NVP Countries should take steps to progressively reduce the use of stavudine (d4T) in first-line regimens because of its well-recognized toxicities.
HIV + pregnant women	AZT + 3TC + NVP, AZT preferred but TDF acceptable, EFV included as a NNRTI option, but do not initiate during first trimester, benefits of NVP outweigh risk where CD4 count is 250-350 cells/mm^3
HIV/TB coinfection	AZT or TDF + 3TC or FTC + EFV, ART should be initiated irrespective of CD4 cell counts as soon as possible in all HIV/TB-coinfected patients with active TB (within 8 weeks after the start of TB treatment)
HIV/HBV coinfection	TDF + 3TC or FTC + EFV Irrespective of CD4 cell counts or WHO clinical stage, patients who require treatment for HBV infection shoud start ART. First-line and second-line regimens for these individuals should contain TDF and either emtricitabine (FTC) or lamivudine (3TC) NVP or triple NRTIs are acceptable options if EFV cannot be used
What to use in second-line therapy	Second-line ART should consist of a ritonavir-boosted protease inhibitor (bPI) + two NRTIs, one of which should be AZT or TDF, based on what was used in first-line therapy. Ritonovir-boosted atazanavir (ATV/r) or lopinavir/ritonavir (LPV/r) are the preferred bPIs If d4T or AZT in 1st-line therapy: TDF + 3TC or FTC + ATV/r or LPV/r If TDF was used in first-line therapy: AZT + 3TC + ATV/r or LPV/r ABC (abacavir) and ddI (didanosine) can be considered as backup options in case of AZT or TDF toxicity or if AZT or TDF are contraindicated
HIV/TB coinfection	If rifabutin available (150mg 3 times/week) + same regimens If not – same NRTI backbones recommended for adults + LPV/r or SQV/r with adjusted dose of RTV (LPV/r 400mg/400mg twice a day or LPV/r 800mg/200mg twice a day or SQV/r 400mg/400mg twice a day)
HIV/HBV coinfection	AZT + TDF + 3TC (or FTC) + ATV/r or LPV/r TDF + 3TC (or FTC) failed in the first-line regimen should be continued for anti-HBV activity and to reduce the risk of hepatic flares
Laboratory monitoring	All patients should have access to CD4 cell-count testing to optimize pre-ART care and ART management. HIV-RNA (viral load) testing is recommended to confirm suspected treratment failure. Drug toxicity monitoring should be symptom-directed.
NRTIs not to be used together	d4T + AZT (proven antagonism), d4T + ddI (overlapping toxicities), 3TC + FTC (interchangeable, but should not be used together)

C. Clinical considerations

Clinical stageing is intended for use where HIV infection has been confirmed by HIV antibody testing. It is used to guide decisions on when to start cotrimoxazole prophylaxis and when to start ART.

Both stages 3 and 4 are independently predictive of HIV-related mortality. Assessing the need for ART in those with WHO clinical stage 2 presents challenges. Some stage 2 conditions may

be considered more indicative of HIV disease pregression than the others. For example, papular pruritic eruptions (PPEs) typically occure with CD4 counts of <200 cells/mm^3, and most physicians would recommend the initation of ART in the presence of PPEs and the absence of a CD4 count. Conversely, recurrent oral ulceration or a fungal nail infection generally would not be considered triggers to start ART.

Given the uncertainty with which stage 2 conditions predict mortality and disease progression, HIV-infected individuals with WHO clinical stage 2 whould have priority access to CD4 testing to decide if treatment should be initiated and the same applies to asymptomatic individuals (WHO stage 1).

Table 2. **WHO clinical staging of HIV disease in adults and adolescents. (Source: Revised WHO clinical staging and immunological classification of HIV and case definition of HIV for surveillance, 2006).**

Clinical stage 1
Asymptomatic
Persistent generalized lymphadenopathy
Clinical stage 2
Moderate unexplained weight loss (under 10% of presumed or measured body weight)
Reccurent respiratory tract infections (sinusitis, tonsillitis, otitis media, pharyngitis)
Herpes zoster
Angular cheilitis
Recurrent oral ulcerations
Papular prurutic eruptions
Seborrhoeic dermatitis
Fungal nail infections
Clinical stage 3
Unexplained severe weigh loss (over 10% of presumed or measured body weight)
Unexplained chronic diarrhoea for longer than 1 month
Unexplained persisstent fever (intermittent or constant for longer than 1 month)
Persistent oral candidiasis
Oral hairy leukoplakia
Pulmonary tuberculosis
Severe bacterial infections (e.g. pneumonia, empyema, meningitis, pyomyositis, bone or joint infection, bacteraemia, severe pelvic inflammotory disease)
Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis
Unexplained anaemia (below 8g/dl), neutropenia (below 0,5 x 109/l) and/or chronic thrombocytopenia (below 50 x 109/l)
Clinical stage 4
HIV wasting syndrome
Pneumocystis jirovci pneumonia
Recurrent severe bacterial pneumonia
Chronic herpes simplex infection (orolabial, genital or anorectal of more than 1 monthęs duration or visceral at any site)
Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs)
Extrapulmonary tuberculosis
Kaposi sarcoma
Cytomegalovirus disease (retinitis or infection of other organs, excluding liver, spleen and lymph nodes)
Central nervous system toxoplasmosis
HIV encephalopathy
Extrapulmonary cryptococcosis including meningitis
Disseminated nontuberculous mycobacteria infection
Progressive multifocal leukoencephalopathy
Chronic cryptosporidiosis
Chronic isosporiasis
Disseminated mycosis (histoplasmosis, coccidiomycosis)
Recurrent septicaemia (including nontyphoidal Salmonella)
Lymphoma (cerebral or B cell non-Hodgkin)
Invasive cervical carcinoma
Atypical disseminated leishamaniasis
Symptomatic HIV-associated nephropathy or HIV associated cardiomyopathy

D. When to switch ART to second-line regimens

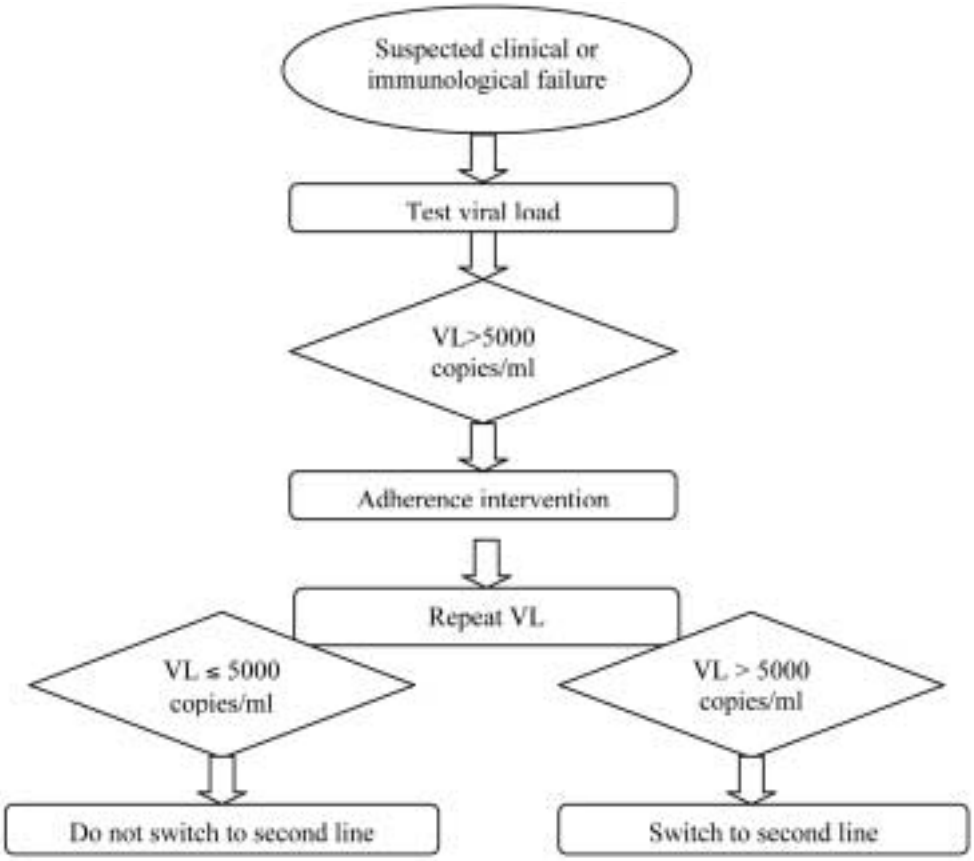
1. Where available, use viral load (VL) to confirm treratment failure.
2. Where routinely available, use VL every 6 months to detect viral replication.
3. A persistent VL of >5000 copies/ml confirms treatment failure.
4. When VL is not available, use immunological criteria to confirm clinical failure.

An individual must be taking ART for at least 6 months before it can be determined that a regimen has failed. Viral load measurement is considered a more sensitive indicator of treatment failure compared to clinical or immunological indicators. VL may be used in a targeted or routine strategy.
The objective of *the targeted strategy* is to confirm suspected clinical or immunological failure, maximizing the clinical benefits of first-line therapy and reducing unnecessary switching to second-line therapy. Targeted VL may also be used earlier in the course of ART (within 4 to 6 months of ART initiation) to assess adherence and introduce an adherence intervention in at-risk patients before viral mutations start to accumulate.
The objective of *the routine VL strategy* is to detect virological failure early, leading to adherence interventions or changes in therapy that will limit ongoing viral repliations, reduce the risk of accumulation of resistance mutations and protect the drug susceptibility of second-line and subsequent therapies.
VL has the potential to save the cost of expensive second-line drugs by confirming that they are needed.
ART switching has occured at lower than expected rates in resource-limited settings, and the limited use of virological monitoring has been identified as an important factor. Many countries are considering employing VL to optimize the use of expensive second-line drugs. The same rationale applies when third-line drugs are available. Physicians and PLHIV consider clinical and immunological monitoring insufficient to promote a timely switch and want VL monitoring. The initial and ongoing cost is high. The use of VL to confirm clinical-immunological switch (targeted approach) will cost less than the routine use of VL monitoring (Fig. 1).

Table 3. **ART switching criteria**

Failure	**Definition**	**Comments**
Clinical failure	New or recurrent WHO stage 4 condition	Condition must be differentiated from immune reconstitution inflammatory syndrome (IRIS) Certain WHO clinical stage 3 conditions (e.g. pulmonaary TB, severe bacterial infections), may be an indication of treatment failure
Immunilogical failure	Fall of CD4 count to baseline (or below) OR 50% fall from on-treatment peak value OR Persistent CD4 levels below 100 cells/mm^3	Without concomitant infection to cause transient CD4 cell decrease
Virological failure	Plasma viral load above 5000 copies/ml	The optimal viral load threshold for defining virological failure has not been determined. Values of >5000 copies/ml are associated with clinical progression and a decline in the CD4 cell count

Figure 1. **Targeted viral load strategy for failure and switching**



E. Third-line regimens

Recommendations

- National programmes should develop policies for third-line therapy that consider funding sustainability and the provision of equitable access to ART
- Third-line regimens should include new drugs likely to have anti-HIV activity, such as integrase inhibitors and second-generation NNRTIs and PIs
- Patients on a failing second line regimen with no new ARV options should continue with a tolerated regimen

The criteria for diagnosing second-line failure are the same as those used for diagnosing first-line failure. However, many countries have financial constraints that might limit the adoption of third-line regimens. There is limited evidence to guide third-line strategies in resource-limited settings, with few studies of newer agents in these settings. Data from RCTs, predominantly in developed countries, are available for **boosted darunavir (DRV/r), etravirine (ETV) and raltegravir (RAL).** Taken together, these data support the effifacy of these agents in highly ART-experienced patients. Many studies are still in progress and for that there is still uncertainty about what third-line drugs should be provided.

F. Cotrimoxazole prophylaxis

Cotrimoxazole prophylaxis is recommended for all symptomatic individuals (WHO clinical stages 2, 3, or 4) including pregnant women. Where CD4 testing is available, cotrimoxazole prophylaxis is recommended for individuals with a CD4 cell count of <350 cells/mm^3, particularly in resource-limited settings where bacterial infection and malaria are prevalent among PLHIV. If the main targets for cotrimoxazole prophylaxis are Pneumocystis jiroveci pneumonia and toxoplasmosis infection, a CD4 threshold of <200 cells mm^3 may be choosen. Data from an observational analysis in the DART trial showed that the use of cotrimoxazole prophylaxis reduced mortality by 50% in severely immune-suppressed HIV-infected adults initiating ART, with benefits continuing for at least 72 weeks. Futhermore, cotrimoxazole prophylaxis reduced malaria incidence in these patients.

G. Laboratory monitoring

Guiding principles

1. Laboratory monitoring is not a prerequisite for the initiation of ART.
2. CD4 and viral load testing are not essential for monitoring patients on ART.
3. Symptom-directed laboratory monitoring for safety and toxicity is recommended for those on ART.
4. If resources permit, use viral load in a routine approach, measured every 6 months, with the objective of detecting failure earlier than would be the case if immunological and/or clinical criteria were used to define failure.

Table 4. **Laboratory monitoring before, during and after initiating ART**

Phase of HIV managment	**Recommended test**	**Desirable test**
At HIV diagnosis	CD4	HbsAg
Pre-ART	CD4	
At start of ART	CD4	Hb for AZT (low CD4 or BMI) Creatinine clearance for TDF, ALT for NVP (for high risk patients)
On ART	CD4	Hb for AZT, creatinine clearance for TDF, ALT for NVP (for high risk patients)
At clinical failure	CD4	Viral load
At immunological failure	Viral load	
Women exposed to PMCT interventions with sd-NVP with a tail within 12 months and without a tail within 6 months of initiating ART	Viral load 6 months after initiation of ART	

H. Dosages of recommended antiretrovirals

Table 5. **Dosages of antiretrovirals**

Generic name	Dose
Nucleoside reverse transcriptase inhibitors (NRTIs)	
Abacavir (ABC)	300 mg twice daily or 600 mg once daily
Didanosine (ddI)	400 mg once daily (>60 kg) 250 mg once daily (≤60 kg)
Emtricitabine (FTC)	200 mg once daily
Lamivudine (3TC)	150 mg twice daily or 300 mg once daily
Stavudine (d4T)	300 mg twice daily
Zidovudine (AZT)	250-300 mg twice daily
Nucleotide reverse transcriptase inhibitors (NtRTIs)	
Tenofovir (TDF)	300 mg once daily (dosage adjustment for individual with altered creatinine clearance)
Non-nucleoside reverse transcriptase inhibitors (NNRTIs)	
Efavirenz (EFV)	600 mg once daily
Etravirine (ETV)	200 mg twice daily
Nevirapine (NVP)	200 mg once daily for 14 days, followed by 200 mg twice daily (in the presence of rifampicin, or when patients switch from EFV to NVP, no need for lead-in dose of NVP)
Protease inhibitors (PIs)	
Atazanavir + ritonavir (ATV/r)	300 mg + 100 mg once daily
Darunavir + ritonavir (DRV/r)	600 mg + 100 mg twice daily
Fos-amprenavir + ritonavir (FPV/r)	700 mg + 100 mg twice daily
Indinavir + ritonavir (IDV/r)	800 mg + 100 mg twice daily
Lopinavir/ritonavir (LPV/r)	Fixed dose Combination tablets (LPV 200 mg/RTV 50 mg) Two tablets (400mg/100 mg) twice daily (LPV/r can be administered as 4 tablets once daily, i.e. LPV 800mg + RTV 200 mg once daily in patients with less than three LPV resistance-associated mutations on genotypic testing. Once-daily dosing is not recommended in pregnant women or patients with more than three LPV resistance-associated mutations)
	Considerations for individuals on TB therapy In the presence of rifabutin, no dose adjustment required In the presence of rifampicin, use ritonavir superboosting (LPV 400 mg + RTV 400 mg twice daily) or LPV 800 mg + RTV 200 mg twice daily, with close clinical and hepatic enzyme monitoring
Saquinavir + ritonavir (SQV/r)	1000 mg + 100 mg twice daily
	Considerations for individuals on TB therapy In the presence of rifabutin, no dose adjustment required In the presence of rifampicin, use ritonavir superboosting (SQV 400 mg + RTV 400 mg twice daily) with close clinical and hepatic enzyme monitoring
Integrase strand transfer inhibitors (INSTIs)	
Raltegravir (RAL)	400 mg twice daily

I. Prevention and assessment of HIV drug resistance

The emergence of HIV drug resistance (HIVDR) is of increasing concern in countries where ART and ARV prophylaxis is widely used, and represents a potential impediment to the achievement of long-term success in treatment outcomes. The rapid or uncontrolled emergence of HIVDR could lead to and increrase in therapeutic failures, transmission of resistant virus, and a decrease in therapeutic options, treatment programme effectiveness and survival.

Implementing programme elements that minimize the emergence of HIVDR, including optimi-

zing access to ART, supporting appropriate ART prescribing and adherence, and ensuring adequate and continuous drug supplies, is essential for preserving the efficacy of the limited number of ARV drugs available in many countries. Transmission of resistant virus is minimized through support for prevention programmes for HIV positive individuals.

J. Some important questions (review of different studies)

1. When to start ART?

Table 6. **Early ART versus standard or deferred ART (CD4 ≤200 or CD4 ≤250 cells/μl) for asymptomatic, HIV-infected, treatment-naive adults**

	Early ART		Deferred ART	RR
Deaths	1,1%	vs	4,6%	0,26
Tuberculosis	3,5%	vs	6,8%	0,54

2. What ART to start?

Table 7. **Should EFV vs NVP be used for initial ART?**

Initial ART	EFV		NVP	RR
Mortality (randomized trials)	5%	vs	5,7%	0,89
Mortality (observational trials)	9,3%	vs	4,2%	1,47

Table 8. **Should TDF vs ABC be used for initial ART? (randomized clinical trials)**

Initial ART	TDF	ABC	RR
Mortality – not reported	0%	0%	-
Clinical response	0,3%	0%	2,98

Table 9. **Should TDF vs d4T or AZT be used for initial ART? (randomized clinical trials)**

Initial ART	TDF	d4T or ZDV	RR
Mortality	2%	1,7%	1,18

Table 10. **Should AZT vs d4T be used for initial ART? (observational studies)**

Initial ART	AZT	d4T	RR
Mortality 9,4%	13,1%	0,72	
Virological response	38,8%	58,3%	0,67

3. Monitoring strategies for quiding when to swich.

Table 11. **Should clinical monitoring vs immunological and clinical monitoring be used in guiding when to switch first-line antiretroviral therapy in adults in low-resource settings?**

Monitoring	Clinical	Immunological and clinical	HR
AIDS-defining illness or mortality	26,9%	20,4%	1,33

Table 12. **Should clinical monitoring vs virological, immunological and clinical monitoring be used in guiding when to switch first-line antiretroviral therapy in adults in low-resource settings?**

Monitoring	Clinical	Virological, immunological and clinical	HR
AIDS-defining illness or mortality	19,1%	12,8%	1,88
Unnecessary switch (switch to second line therapy			RR
with undetectable viral load)	4%	0%	30,3
Virological treatment failure	5%	4,3%	1,16

Table 13. **Should clinical and immunological monitoring vs virological, immunological and clinical monitoring be used in guiding when to switch first-line antiretroviral therapy in adults in low-resource settings?**

Monitoring	Clinical and immunological	Virological, immunological and clinical	HR
AIDS-defining illnes or mortaity	15,6%	12,8%	1,28

Table 14. **Should virological, immunological, and clinical monitoring vs immunological and clinical monitoring be used in guiding when to switch first-line antiretroviral therapy in adults in low-resource settings?**

Monitoring	Virological, immunological and clinical	Immunological and clinical	HR
Mortality	-	-	2,28
Rate of switching	3,7%	2,5%	RR 1,6

4. What to use in second-line?

Table 15. **Should PI monotherapy be used for patients failing first-line therapy?**

Therapy	PI monotherapy	cART	RR
Mortality	1,4%	0,7%	1,46

Table 16. **Should darunavir/ritonavir vs. Lopinavir/ritonavir be used for patients failing first-line therapy?**

Therapy	Darunavir/ritonavir	Lopinavir/ritonavir	RR
Mortality	0,3%	1,4%	0,2
Severe adverse events	9,9%	15,9	0,62

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57.

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF FUNGAL INFECTIONS – AN ICAAC UPDATE

P. Mikolasova, M. Cervenkova, J. Bordacova, G. Mikolasova, D. Kalatova, E. Knoskova, J. Bozik, H. Konosova

SEUC University Library Bratislava

M-1046

Pilot Prospective Study of High Dose (10 mg/kg/d) Liposomal Amphotericin B (L-AmB) for the Initial Treatment of Zygomycosis: AMBIZYGO Trial

In this prospective study of patients with zygomycosis, high dose liposomal amphotericin B +/- surgery was associated with an overall response rate of 35% at W 4.

M-1049

Skin Colonization by *Fusarium* spp. in Patients with Hematologic Malignancies Increases the Risk for Invasive Fusariosis.

Our data suggest that: 1) baseline cultures in patients without alterations in the skin and / or nails seems not justifiable; 2) cultures of pre-existing lesions may help to identify a group of patients at higher risk to develop invasive fusariosis.

M-1050

Risk Stratification for Early Mortality in Patients (pts) with Hematologic Cancer and Invasive Pulmonary Mucormycosis

A trend towards delay > 5 days in the initiation of mucormycosis-active antifungal therapy (OR 2.3; 0.96-5.6, P=0.06), active malignancy (OR 3.7; 1.2-13, P=0.03) and monocytopenia (OR 3.7; 1.2-13.6, P=0.03) were associated with higher risk of early death.

This study provides is the first attempt to develop a risk index for all cause early mortality for IPM in a relatively homogeneous pt population.

M-1051

Fungal and Bacterial Peritonitis in Continuous Ambulatory Peritoneal Dialysis Patients

C. albicans was the most common species (n=14, 36%); followed by *C. parasilosis* (n=10, 25%), *C. glabrata* (n=5, 13%) and *C. tropicalis* (n=2, 5%).

Fungal peritonitis was associated with catheter removal in most patients and initiation of hemodialysis. High mortality rates of 15% were seen in both fungal and bacterial peritonitis episodes.

M-1054

Invasive Fungal Infections among Pediatric Transplant Recipients from the Transplant-Associated Infection Surveillance Network

Conclusion: In this large prospective surveillance study, the most common IFI in pediatric transplant recipients was invasive candidiasis in SOT and aspergillosis in HSCT.

M-1058

Fungal Infections in Neutropenic Patients with Leukemia: Responses to Voriconazole Assessed by Serial Computerized Tomography (CT) Scanning

M. KLEINBERG

Neutropenic patients with acute leukemia with suspected IFI had better outcomes than expected

from AF trials of patients with proven IFI. This suggests that remission status of leukemia is a major determinant of outcome of therapy for IFI.

M-1061

Immediate versus Deferred Antifungal Treatment in High-Risk Patients with Febrile Neutropenia: Results from the Randomized, Double-Blind, Placebo-Controlled, Multicenter IDEA Study

G. MASCHMEYER

In a limited number of febrile neutropenic high-risk pts, immediate empirical VCZ treatment was safe but did not show a significant clinical benefit.

M-1067

Impact of Epidemiological Changes in Candidemia on Outcome

J. FORTUN

An increase in the number of episodes per year was observed with a rise in the number of cases caused by non-albicans *Candida* sp. Despite of the increase in AF drug use and appearance of new drugs mortality associated with candidemia remains high.

M-1068

Exposure to Antianaerobic Antibimicrobials and the Risk of *Candida glabrata* Bloodstream Infection

R. BEN-AMI

In this national survey of candidemia, recent metronidazole exposure was a risk factor *C. glabrata* infection, and clindamycin treatment was a risk factor for FLC non-susceptible *C. glabrata.* These findings are consistent with results of animal studies showing that antimicrobials active against anaerobic bacteria promote gut colonization with *C. glabrata.*

M-1069

Candidemia in the 21st Century: No Changes in Mortality Despite Increased Use of an Expanded Antifungal Armamentarium

R. K. SHIELDS

The 30-day crude mortality and attributable mortality rates (CMR and AMR) were 34% and 23%, respectively. AMR was highest for CA (26%) and CG (25%), and lowest for CP (6%).

Despite widespread use of newer agents added to the antifungal armamentarium, the incidence of candidemia continued to increase and the AMR remained unchanged. Improvements in diagnosis and more timely administration of antifungal therapy are needed to improve the outcome of candidemia.

K-1716

Invasive Aspergillosis Increase the Risk of Death in Acute Myeloid Leukemia Patiens Receiving Induction Chemotherapy

IA in AML patiens under induction chemotherapy was associated with an increased risk of death for patiens with remission or failure of chemotherapy while prevention of IA with environmental producers or usány individua prophylaxis will improve prognosis.

K-1717

Infections Following Rituximab Therapy for Hematological Malignancies

J. NISSEN

The overall incidence of infections in the different subgroups is comparable to corresponding patient groups who received the same chemotherapy regimens without rituximab.
Severe infectious complications are rare and manageable.

K-1714

Etiology of Febrile Episodes in Hematological Malignancies: Results from HEMA e- CHART Registry

L. PAGANO[1]

The Hema e-Chart is a useful network for collecting significant information about FE in HM. It provides a complete system for the epidemiological study of infectious complications in these patients

K-1720

Piperacillin/Tazobactam (P/T) Versus Cefoperazone/Sulbactam (C/S) in Adult Low Risk Febrile Neutropenia (FEN) Cases

C/S is not ststistically inferior than P/T in the empirical treatment of adult FEN. To our knowledge this is the firststudy comparing these two agents in this indication.

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. - **12.** Rohde, J.: Lancet, 2008, 372, 950-964.

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF HIV – AN ICAAC UPDATE

Bordacova, J., Cervenkova, M., Mikolasova, P., Mikolasova, G., Kalatova, D., Knoskova, E., Bozik, J., H. Konosova

St. Elizabeth University College, Bratislava

H-1810

Characterization of the Resistance Profile of TMC278: 48-week Analysis of the Phase 3 Studies ECHO and THRIVE

Background: ECHO (C209) and THRIVE (C215) are ongoing, 96-week, Phase 3 trials to compare the efficacy, safety and tolerability of TMC278 (25mg qd) vs. efavirenz (EFV) (600mg qd) plus fixed N(t)RTI background regimens in HIV-1 infected treatment-naēve patients.

These results confirm that TMC278, in combination with a N(t)RTI background regimen, was effective and non inferior to EFV.

H-1668a

Raltegravir Pharmacokinetics during Pregnancy

B. M. BEST

Consistent with previous reports, RAL PK showed extensive variability.

H-1812

Meta-Analysis of Efficacy Outcomes for Treatment-Naïve and Experienced HIV-Infected Women in Randomized Controlled Clinical Trials (RCTs) (2000-2008)

G. SOON

FDA meta-analyses suggest no clinically or statistically significant gender differences in Week 48 efficacy outcomes, regardless of treatment history, drug class, age, race, or geography.

H-1813

CCR5 Inhibitors and CD4 Cell Count Change in Treatment Experienced Patients

M. PICHENOT

Based on this analysis, CCR5 inhibitors do not allow a better CD4 cell recovery when compared to others new ARV agents in treatment-experienced pts.

H-1811

48-Week Resistance and Efficacy Subgroup Analysis of Once- vs Twice-Daily Darunavir/Ritonavir (DRV/r) in ODIN

E. LATHOUWERS

DRV/r qd was effective in this treatment-experienced population.

H-1808

48 Week (Wk) Efficacy, Pharmacokinetics (PK) and Safety of Once a Day (QD) 400 mg Nevirapine (NVP) Extended Release Formulation (XR) for Treatment of Antiretroviral (ARV) Naïve HIV-1 Infected Patients (Pts) [VER*x*VE]

J. GATHE

Study results confirm the NI in virologic efficacy of XR compared to IR with less peak to T fluctuation in NVP plasma levels.

H-1809

Switching from Kivexa (epzicom) [KVX] + Efavirenz [EFV] to Atripla [ATR] Reduces Cholesterol in Hypercholesterolemic Subjects: Primary Endpoint Results of a 24-Week Randomized Study

G. MOYLE

H-1662

Low Birthweight (LBW) Associated with Antepartum HAART in Zambia

Our HAART regimen appears to be associated with LBW birth in Zambia. However, the very low rate of perinatal HIV transmission associated with this regimen makes this still a superior strategy to short course regimens.

H-1666

Use of Lopinavir/Ritonavir During Pregnancy in a Mexican Cohort

We consider that is safe to give standard-dose of LPV/r in mexican-women during all pregnancy-trimesters

H-1668

Effectiveness of Nelfinavir-Based Haart in Prevention of Infant Adverse Events in a Rural Setting in Zimbabwe

P. THISTLE

This HAART regimen showed improved effectiveness in prevention of short term infant adverse events compared to sdNVP alone, demonstrating that HAART can be effective even in rural, severely resource limited settings.

H-204

Sustained Virologic Efficacy of Atazanavir (ATV) Versus Atazanavir/Ritonavir (ATV/r), Each in Combination with Abacavir/Lamivudine (ABC/3TC) over 120 Weeks: The ARIES Trial

Background: The ARIES trial demonstrated the non-inferiority of ATV to ATV/r, both with ABC/3TC over 84 weeks after induction with ATV/r + ABC/3TC

H-206

Association Between Early Virologic Response and Immunologic Outcomes in Raltegravir-Treated Patients

Wk 8 vRNA < 50 c/mL is correlated with a faster time to normalization of CDR; more so for pts on RAL who achieve this early viral response.

H-207

24 Wk Efficacy and Safety of Transitioning Virologically Stable HIV-1 Patients from IR Nevirapine 200 mg BID to Nevirapine XR 400 mg QD (TRANxITION)

Nevirapine extended release (NVP XR) may offer therapeutic benefit relative to immediate release (IR) NVP by facilitating a once-daily (QD) regimen.

H-209

Maraviroc (MVC) Expanded Access Program (EAP): Outcomes in Treatment-Experienced Patients Receiving MVC With or Without Other Novel Agents

A.LAZZARIN

Background: The MVC global EAP provides access to MVC for R5 HIV-infected individuals with limited or no treatment options to evaluate safety of MVC in combination with other antiretroviral drugs (ARVs), including novel agents.
Conclusions: Safety and incidence of treatment-emergent adverse events and liver-related lab abnormalities were comparable in EAP patients who received MVC alone or combined with novel ARV drugs.

H-211

Treatment of HIV Infection in Injection Drug Users: Directly Observed Therapy (DOT) and Self Administered Therapy (SAT)

Conclusions: By retaining patients in care for longer periods of time, DOT can be an important tool in improving treatment responses in HIV-infected IDUs.

H-213

Lack of Prophylaxis against Pneumocystis Pneumonia and Mortality: Results from the TREAT Asia HIV Observational Database (TAHOD)

P. L. LIM

Introduction: Pneumocystis jiroveci pneumonia (PCP) prophylaxis is standard of care for patients with CD4 count < 200 cells/μL. Patients without prophylaxis had a significantly higher mortality.

H-214

Safety and Efficacy of Lopinavir/ritonavir (LPV/r) in combination with Raltegravir (RAL) in HIV-infected Subjects at 48 weeks

J. P. FALLON[1]

Conclusions: In this final analysis, LPV/r in combination with RAL appears to be effective and well tolerated in treatment-naïve and experienced subjects. Adequately powered, prospective, randomized comparison studies are needed to evaluate this novel combination

H-215

Virological Failure and Drug Resistance in Patients on Antiretroviral Therapy after Documented Treatment Interruption in Lilongwe, Malawi

J. LUEBBERT

Conclusions: Treatment interruption correlated with virological failure after re-initiated therapy in almost one third of the patients and was often accompanied with resistance associated mutations. To prevent poor clinical outcomes and a spread of drug resistance mutations, a switch to the available protease inhibitor based 2nd line therapy is required.

H-216

First Line HAART Failure in a Resource-Limited Country (RLC): Impact of Physicians' Specialty and Year of HAART Initiation. Results from the Chilean AIDS Cohort (ChiAC)

C. J. BELTRAN MD

In this RLC population-based study, we found a high rate of virological success in naēve patients. Adjusted for BL risk factors for failure, initiation of HAART before 2003 and care by nonspecialists staffed centers are independently associated with virological failure of first HAART.

H-217

Comparisons of Serologic Responses to Hepatitis A Vaccination Between HIV-Infected and HIV-Uninfected Men Who Have Sex with Men in the Era of Highly Active Antiretroviral Therapy

Y. TSENG

Conclusions: At 6th of HAV vaccination, HIV-infected MSM receiving 2 doses of HAV vaccine achieved similar serologic responses to HIV-uninfected MSM receiving 1 dose. The response rates of these two groups were much higher than that of the HIV-infected MSM who received 1 dose of HAV vaccine.

H-230

Prevalence of Vitamin D Deficiency in HIV infection

Despite the low latitude of Spain, moderate vitamin D deficiency in HIV infected patients is more prevalent in our cohort than in the cohorts of Switzerland, Netherlands and Boston.
The use of nevirapine may diminish the risk of vitamin D deficiency.

H-232

Tenofovir DF/Emtricitabine and Efavirenz in HIV-1 Infected Patients Treated for Tuberculosis

Conclusions: Once daily therapy with tenofovir DF/emtricitabine and efavirenz is an effective and well accepted simplified strategy for the treatment of HIV-TB co-infected pts.

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. - **12.** Rohde, J.: Lancet, 2008, 372, 950-964.

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF RESISTENCE TO ATB AN ICAAC UPDATE

M. Cervenkova, P. Mikolasova, J. Bordacova, G. Mikolasova, J. Vallova, D. Kalatova, E. Knosková, J. Bozik, H. Konosova

SEUC Pribram, Czech Republic

L1- 521 a

Final results from Stage 1 of a Double- Blind Placebo – Controlled Trial with TMC207 in Patiens with Multi- Drug Resistant (MDR) Tuberculosis (TB)

A1-059

Weight not Diabetes Mellitus Predicts Failure of Anti-Tuberculosis Therapy In Treated Tuberculosis Patients with Concurrent Diabetes Mellitus

J. G. PASIPANODYA

Most failure of therapy in DM is explained by patient weight, not the DM itself.

L1-2208

The Safety of Using the New Macrolides in the First Trimester of Pregnancy

B. BAR-OZ

This study suggests that the new macrolides are not associated with a significantly increased risk of major birth defects or cardiac malformations.

Mortality Trends aminy Adults with Pneumococcal Meningitis efore and after Introduction of Adjunctive Corticoseroid Therapy:

Mortality related to pneumococcal meningitis in adults remains high in Denmark. Our results indicate a nearly 30% košer mortality in the post- ACT period after adjusting for individual patient – related factors at the population level.

C2-2028a

Factors Associated with Isoniazid Resistant Tuberculous Meningitis in the United States, 1993 to 2005

Country of origin influenced the prevalence of initial isoniazid resistance. Prospective trials are needed to evaluate TBM treatment strategies for patients with known or suspected isoniazid resistant disease.

Antibiotic Resistant Acute Respiratory Infections and Diarrheal Disease in Zambia: A Situation Analysis and Needs Assessment

Despite limited data, S. pneumoniae is recognized as a main pediatric ARI pathogen. In view of these findings, efforts are underway to obtain reliable surveillance data by equipping microbiology laboratories and training staff members to use routine diagnostics.

P-1121

Antibiotic Resistance Compromises Treatment of Pneumonia in Ugandan Children

Although febrile children with pneumonia are frequently seen in outpatient settings, and antibiotic therapy is almost always prescribed, many received either cotrimoxazole (80% ABR) or no antibiotic at all, thus therapy was ineffective or absent in about 37% of cases.

Children with a pneumonia diagnosis were almost as likely to receive an antimalarial (58%) as an effective antibiotic (63%).

P-1122

Hospital-Based Directly Observed Therapy for High Risk Patients with Smear Positive Pulmonary Tuberculosis

Mosquitoes, Possums and the transmission of Mycobacterium ulcerans (Buruli Ulcer)

Mosquitoes may then transmit MU between possums, or from possums to humans.

L1-1028

Time to Antibiotics for Community-Acquired Pneumonia: Time for Diagnostic Accuracy?

Extending the process measure of antibiotic administration from 4 to 6 h increased compliance with this measure but did not improve CAP diagnostic accuracy. This time measure is leading to over diagnosis and higher antibiotics utilization. We suggest including accuracy of diagnosis as one of the components of process measures.

L1-1029

Contradiction Between In Vitro and Clinical Outcome: Does Azithromycin Intravenous Formulation (AZM-IV) Demonstrate Clinical Efficacy in Macrolide Resistant Pneumococcal Pneumonia?

S. KOHNO

AZM-IV demonstrated excellent clinical and bacteriological effects on moderate to severe pneumococcal pneumonia in spite of high MIC and resistance gene development. This study has revealed the unique property of AZM-IV against *S. pneumoniae*. Our findings suggest favorable clinical and bacteriological effects in most patients even with low susceptibility to AZM by *in vitro* testing.

L1-1032

Effects of Cardiovascular Drugs on Outcomes of Patients with Community-Acquired Pneumonia Requiring Hospitalization

Conclusions: Cardiovascular drug use was not associated with a lower risk of mortality in patients with CAP. Nevertheless, beta-blockers use was associated with higher risk for ICU admission. The link between beta-blockers and worst outcome in CAP deserves further investigations.

L1-1033

Risk Factors, Clinical Features, and Outcomes of Pneumonia Complicating Pandemic (H1N1) 2009

Pneumonia is a frequent complication among adults hospitalized for pandemic (H1N1) 2009 and causes significant morbidity. Mortality in pandemic (H1N1) is low, but occurs mainly in patients with pneumonia. Early oseltamivir therapy is a protective factor for this complication.

L1-1044

"Real-World" Failure of Initial Antibiotic Therapy in Non-ICU Community-Acquired Pneumonia (CAP) in US Hospitals, 2000-2009

We identified 41,699 patients with non-ICU CAP, of whom 33,117 (79%) received one of the 40 regimens of interest. Fifteen percent of patients experienced “real-world” failure of initial antibiotic therapy. About 1 in 7 pts with non-ICU CAP experience “real-world” failure of initial antibiotic therapy.

P-1778

Tuberculosis Epidemic Associated with Hunger in Zimbabwe

Economic collapse with resultant hunger and malnutrition was associated with an epidemic of TB despite falling HIV prevalence. This epidemic now appears to be improving with economic stabilization.

L1-516

Moxifloxacin in Modified Regimens for Tuberculosis (TB): A 9-Year Experience From a Reference Center

L. R. CODECASA

Out of 3912 TB cases treated in the study period, 323 (8.2%) received a modified regimen, of them 216 (66.9%) received Mx. Reasons for a modified regimen were resistance to 1st line drug in 178 pts (121 including Mx, 68%) of which 81 MDR (55, 67% including Mx).

Replacement of one first-line drugs with Mx showed to be effective and relatively safe in most patients requiring a modified regimen due to AE or resistance.

L1-517

Four Cases of XDR-Tuberculosis Treated with Meropenem-Clavulanate

M. PAYEN

We report the use of the Meropenem-clavulanate in four patients with XDR-TB and limited therapeutic options.

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12.** Rohde, J.: Lancet, 2008, 372, 950-964.

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF TROPICAL – AN ICAAC UPDATE

Kalatova, D., Bordacova, J., Mikolasova, P., Cervenkova, M.,
Mikolasova, G., Vallova, J., Knoskova , E., Bozik, J., H. Konosova

SEUC Pribram, Czech republic

A1-060a

Safety, Tolerability, Pharmacokinetics and Pharmacodynamics of Sevuparin, a New Depolymerised Heparin to Treat Severe Malaria

Background: Malaria infects erythrocytes with cytoadherence to the endothelium, rosette formation causing severe illness. Sevuparin, a depolymerised heparin, is a receptor antagonist mimicking heparan sulphate and developed as an adjunct treatment of severe malaria.

Sevuparin, a novel depolymerised heparin, is safe in humans with reduced anticoagulant activity compared to normal heparin. The data supports further development of sevuparin in the treatment of severe, life-threatening malaria.

V-448d

Emergence of cross-resistance to oseltamivir and zanamivir in pandemic Influenza A (H1N1) 2009 virus

This is the first report of a mutation 223R in the NA of pandemic A(H1N1)2009 selected by oseltamivir, and associated with cross-resistance to both oseltamivir and zanamivir.

F1-1648a

New Therapeutic for Dengue Infection: Efficacy Studies in a Mouse Model

A combination of PMOplus oligomers targeting the 5'-SL and the 3'-CS are effective against Dengue 2 in a mouse lethal challenge study in providing survival benefit and reduction in viral titer.

P-1764

Antibiotic Profiling of Bacteria Isolated Over Time from Patients with Blood-Stream Infections in a Rural African Setting

Patients with BSI benefit from the introduction of bacteriological diagnosis in a rural African setting. Ciprofloxacin or cefuroxime remain the treatment of choice for patients suffering from typhoid fever in Ghana.

P-1765

Bibliometric Analysis of Publications in Infectious Diseases and Clinical Microbiology Areas: Which Coutries Leaded in 1996-2008 and 2008 Periods?

US is the leading country in both medical microbiology and infectious diseases areas. China is increasing its place in the top five countries.

P-1766

Professional Aircrews: Perceptions of Infectious Diseases and Aviation Medical Issues

All study groups reported a pressing need for enhanced anonymous access to current ID and medical information.

P-1773

What is the Utility of Repeating Blood Films in the Diagnosis of Malaria?

J. M. HARPER

Where malaria is suspected, repeating blood films remains important to confidently exclude this diagnosis, despite advances in rapid diagnostic tests.

P-1110

Sublingual Artemether in Severe Childhood Malaria

Background: The majority of deaths from severe malaria in childhood are caused by the delayed administration of effective antimalarial treatment. **Methods:** 30 children with severe or complicated *falciparum* malaria, or uncomplicated malaria with gastrointestinal complications were randomised to receive artemether sublingual spray, ArTiMist 3mg/kg for 6 doses or intravenous quinine 20mg/kg loading then 10mg/kg tds.

1. 14 (93.3%) of patients met the primary endpoint criteria compared to 10 (66.7%) of patients treated with intravenous quinine. 2. For all other primary and secondary efficacy parameters, there was no statistically or clinically significant difference in the way patients responded to ArTiMist or quinine. 3. Both treatments were safe and well tolerated. 4.

P-1112

Pulmonary Ascariasis: a Diagnosis to Consider in European Patients without Relevant Travel History

Two patients responded well to antiparasitic treatment with albendazole 400mg 1-0-1 for 5 days and mebendazole 100mg 1-1-1 for 3 days, respectively. The third patient was not treated yet because of a planned pregnancy.

This report highlights the importance to consider parasitic infection in patients presenting with eosinophilia and pulmonary symptoms even when travel history is unremarkable.

P-1114

Utility of Serological Follow-Up of Chronic Strongyloidiasis after Anthelminthic Chemotherapy

These results support the use of serological follow-up for strongyloidiasis, and indicate that reversion to negative serostatus after ivermectin therapy is frequent.

P-1119

Health Problems Incidence during Military Deployments Abroad: French Experience

Four thousand sixty five consultations were included with the most frequent reasons for consultation were the following: traumas (20.5 %), diarrheas (19 %), dermatoses (17.5 %), upper and lower respiratory tract infections (10.3 %), back pains (6.5 %), psychiatric disorders (2.3 %), war injuries (1 %), malaria (0.2 %). Seven percent of cases presented with fever. Infectious diseases represented 44 % of all health problems.

P-1124

Colonization of Returning Travelers with *Escherichia coli* that Produce CTX-M-b-Lactamases

Our study suggested that foreign travel, especially to the Indian subcontinent and Africa, represent a major risk for rectal colonization with CTX-M-producing *E. coli* and contribute to the worldwide spread of these bacteria.

P-1125

Eritrean and Sudanese Migrants Presenting with Malaria

In countries with "waves" of migrants from malaria endemic areas, when presenting with fever, malaria should be suspected. Contrary to the known dominance of P. falciparum among malaria species in Eritrea and Sudan, the vast majority presented with P. vivax. The region of P. vivax acquisition remains unclear.

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12.** Rohde, J.: Lancet, 2008, 372, 950-964.

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF NEW DRUGS, NEW ATB – AN ICAAC UPDATE

D. Kalatova, P. Mikolasova, M. Cervenkova, J. Bordacova, G. Mikolasova, E. Knoskova, J. Bozik, H. Konosova

SEUC Programme Pribram, Czech Republic

L1-361a

A Double-blind, Randomized, Phase 2 Study to Compare the Safety and Efficacy of Intravenous CXA-101 (CXA) and Intravenous Ceftazidime (CTZ) in Complicated Urinary Tract Infection (cUTI)

Cubist Pharmaceuticals, Inc.

CXA is a novel parenteral broad-spectrum cephalosporin with excellent *in vitro* activity against *Pseudomonas aeruginosa* and most Enterobacteriaceae.

CXA showed high micro and clinical efficacy in adult pts with cUTI, similar to CTZ.

A1-031

Pharmacokinetics and Safety of Nikkomycin Z

Nikkomycin Z (NikZ) is a chitin synthase inhibitor with activity against endemic fungi including *Coccidioides* spp.

A1-050

Pharmacokinetics of Artemether Sublingual Spray

S. RULISA

Background: The majority of deaths from severe malaria in childhood are caused by the delayed administration of effective antimalarial treatment. **Methods:** Fifteen children with severe or complicated *falciparum* malaria received artemether sublingual spray.

ArTiMist is rapidly absorbed with high plasma concentrations of artemether and DHA reached shortly after dosing. 2. Thirteen (86.7%) of patients had negative parasite counts by the second day of treatment.

A1-056

Thioridazine (THI)-Moxifloxacin (MOX) is Thousand Fold More Active than Ethambutol (EMB)-Azithromycin (AZI) for Mycobacterium aviumInfection (MAI)

S. SRIVASTAVA

A1-060

Pharmacokinetic Studies of a Novel Spectinamide Series of Antituberculosis Agents

P. K. VADDADY

Spectinamides (SPA) are novel amide derivatives of the antibiotic spectinomycin (SPC) and have emerged as a new class of agents to treat tuberculosis

E-807

Activity of NXL-104 in Combination with β-Lactams against Genetically Characterized Class A ESBL and Class C β-Lactamase Producing *Escherichia coli* and *Klebsiella pneumonie*

NXL-104 is an inhibitor of class A and class C β-lactamases

NXL-104 markedly improves the activity of 3rd generation cephalosporins against ESBL Class A and Class C b-lactamase producing *E. coli* and *K. pneumoniae* and modestly improves the activity of MEC, MER and PTZ.

E-816

Activity of CXA-101 against a Large Collection of *P. aeruginosa* Blood Stream Isolates Overexpressing AmpC and the Major Efflux Pumps

CXA-101 shows high activity against *P. aeruginosa* isolates producing prevalent mutation-driven resistance mechanisms.

E-822

In Vitro Activity of Razupenem against Clinically Important Bacterial Isolates

J. L. DZINK-FOX

Novartis Inst.

Razupenem, a novel broad-spectrum carbapenem, is active against various drug-resistant *Enterobacteriaceae* and a wide range of Gram-positive bacteria, including MRSA, enterococci (VRE), and penicillin-resistant *Streptococcus pneumoniae.*

RZM MICs were similar to the activity of the comparative carbapenems against the non-fermentor strains, *P.a, A.b, S.m* and *B.c.*

E-824

Activity of Doripenem and Other Carbapenems Against 18,538 Pathogens Isolated from Canadian Hospitals: CANWARD 2007-2009

G. G. ZHANEL

Doripenem is a new carbapenem.

Doripenem displayed similar activity to meropenem, but was more active versus *Pseudomonas aeruginosa* and *Acinetobacter baumannii.*

F1-831

Novel FabI Inhibitors: Design, Synthesis and Properties

S. FISCHER

The enoyl-ACP reductase FabI that catalyzes the final step of bacterial fatty acid elongation cycle is an attractive target for new antibacterial agents with a novel mode of action.

F1-832

MUT056399: Mode of Action and Mechanisms of Resistance

A.BRYSKIER

FAB pharma, Paris, France

Conclusions: MUT056399 exhibits an original mechanism of action (FabI inhibition)

F1-833

Oral Pharmacokinetics and Efficacy of AFN-1252 in a Murine Septicemia Infection Model with S. aureus

W. J. WEISS

Affinium Pharmaceuticals, Toronto, Canada.

AFN-1252 (AFN), a novel antibiotic inhibitor of the bacterial fatty acid biosynthesis pathway (specifically FabI)

Oral AFN is highly effective in the lethal *S. aureus* murine septicemia model and exhibits much greater efficacy than LNZ.

F1-834
Structure-based Design of Novel 7-substituted Diaminoquinazoline Antibacterial Agents Targeting Dihydrofolate Reductase (DHFR)
M. HILGERS
TriusTherapeutics

F1-838
Advanced Microbiology and In Vivo Efficacy of Rx101005, a Novel 2,4-Diaminoquinazoline DHFR Inhibitor
V. BROWN-DRIVER,
Trius Therapeutics

F1-840
In Vitro Antifungal Activity of E1210: A Novel Antifungal with Activity against Clinically Important Yeasts and Moulds
E1210 demonstrated potent, broad-spectrum antifungal aktivity

F1-847
MK-3118, An Oral Enfumafungin with Potent
M. R. MOTYL
Merck & Co
MK-3118, a semi-synthetic analog of the natural product enfumafungin, displays broad spectrum (*Candida* and *Aspergillus* spp.) in vitro antifungal activity.

F1-850
The Investigational Metalloenzyme Inhibitors VT-1129 and VT-1161 Have Potent In Vitro Activity against *Cryptococcus* Species
A.W. FOTHERGILL
Viamet Pharmaceuticals Inc., Morrisville, NC

F1-855
Evaluation of Novel 2,4-Diaminoquinazoline Inhibitors of *Candida albicans* DHFR
Trius Therapeutics, SAN DIEGO, CA.

F1-858
The Activity of FG3622 and FG3409 against *Scedosporium* spp.
D. LAW
F2G, Manchester
FG3622 and FG3409 belong to a novel chemical class of antifungal agent with a novel mechanism.

H-933
A Phase-Ib/IIa Dose-Escalation Study of OBP-601 (4'-ethynyl-d4T, Festinavir) in Treatment-Experienced, HIV-1-Infected Patients
L. COTTE
ONCOLYS Biopharma, Tokyo, Japan.
OBP-601 is a novel NRTI with in vitro activity against several wild type and drug-resistant HIV-1 and prolonged activity after drug removal.

H-934
S/GSK1349572, a Next Generation HIV Integrase Inhibitor, Pharmacokinetics are not Affected by Omeprazole in Healthy Adults
P. PATEL
GlaxoSmithKline
S/GSK1349572 is an unboosted, once daily integrase inhibitor in clinical development.

H-936
Selection of Resistance against the Second Generation HIV-1 Integrase Inhibitor MK-2048
Merck Res.

H-937
Intracellular Pharmacology of a Novel Protease Inhibitor Pl-100
A.MARCELIN
Ambrilia Biopharma, Montreal, Canada.

E-1550
In Vitro Activity of Daptomycin (DAP) Plus Oxacillin (OXA) against Methicillin-Susceptible (MSSA) and Methicillin-Resistant *Staphylococcus aureus* (MRSA) Strains
J. M. MIRO

E-1552
Comparative In Vitro Activity of Telavancin (TLV), Vancomycin (VAN), and Linezolid (LZD) against Heterogeneously Glycopeptide Intermediate *Staphylococcus aureus* (hGISA)

E-1557
Ability of CEM-102 (Fusidic Acid), Linezolid, Daptomycin to Select Resistant *S. aureus* Mutants at Steady-State Serum Levels
K. KOSOWSKA-SHICK

E-1565
Comprehensive In Vitro Assessment of Oritavancin Activity Tested against *S. aureus* Causing Invasive Disease (2008 - 2009)
JMI Lab., North Liberty, IA.

E-1567
A Single 1200 Mg Human Equivalent (HEQ) Dose of Oritavancin: Assessment of In Vitro and In Vivo Killing of *Staphylococcus aureus* (SA) Strains
F. F. ARHIN

E-1569
In Vitro Evaluation of PTK 0796 Activity Tested against *Staphylococcus aureus,* Including Hospital- and Community-Associated MRSA Strains from the USA and Europe
D. J. BIEDENBACH

E-1570
In Vitro Activities of Nisin Alone or in Combination with Vancomycin and Ciprofloxacin against Methicillin-Resistant and Methicillin Susceptible *Staphylococcus aureus* Strains

E-1581
Activity of Dalbavancin against > 6000 S. aureus, *S. epidermidis, S. pneumoniae,* and *Enterococcus* spp. Isolated from Canadian Hospitals: CANWARD 2007-09
B. WESHNOWESKI

F1-1600
Activity of OligoG Alginate against Gram-Positive Bacteria, Alone and in Combination with Anti-Gram Positive Antibiotics

F1-1606
Evaluation of Repeat-Dose Toxicity Studies with the Alginate Oligomer, OligoG
R. MYRVOLD
The alginate oligomer, OligoG disrupts bacterial biofilms and enhances the activity of antimicrobials and advocated for use in CF patients.

F1-1607
NVB302 Demonstrates Non-Inferiority to Vancomycin in Treatment of *Clostridium difficile* NAP1/027 Infection in an In Vitro Human Gut Model
NVB302 (N) is a new lantibiotic under evaluation as a CDI therapy.

F1-1609
Novel Insights into the Antibacterial Activity and Mechanism of Action of the Lipophilic Antioxidant *Tert*-Butylhydroquinone (TBHQ)
N. OOI
Syntopix

F1-1610
Enhanced Antimicrobial Activity of New Acylated Derivatives of Epigallocatechin Gallate (EGCG)
Y. MATSUMOTO
Inst. of Scientific and Industrial Reserch, Osaka Univ.

F1-1612
Structure Activity Relationship Studies of Aromatic Tail Containing Lipopeptides Leading to CB-183,315, a Novel Cyclic Lipopeptide Being Developed for the Treatment of *Clostridium difficile* Infection
N. YIN
Cubist Pharmaceuticals

F1-1614
Cerium, Chitosans and Hamamelitannin: The Rise of New Microbial Inhibitors?
L. COBRADO
Dept. of Microbiol.

F1-1617
Walkmycins, the Novel Histidine Kinase Inhibitors
M. IGARASHI
Inst. of Microbial Chemistry, Tokyo, Japan

F1-1619
Synthesis and Activity of CB-182,804: A Novel Polymyxin Analog Active against Clinically Relevant Gram-Negative Bacteria
D. D. KEITH
Cubist Pharmaceuticals

F1-1632
Activity of Novel Bis-Indole Agents against Carbapenemase-Producing *Klebsiella pneumoniae*
M. R. JACOBS
Microbiotix Inc, Worcester, MA

F1-1635
Biophysical Characterization of a Potent LpxC Inhibitor CHIR-090
L. XIE
Novartis Inst.
Lipopolysaccharide (LPS) in Gram-negative bacteria, is a validated target for developing novel antimicrobial agents. CHIR-090 is a reported potent inhibitor of LpxC with excellent antibacterial activity.

F1-1638
Potency and Spectrum of Activity of AN3365: A Novel Boron-Containing Protein Synthesis Inhibitor Tested against *Enterobacteriaceae*
R. E. MENDES
JMI Lab
AN3365, which is in Phase I clinical development, is a member of a novel class of boron-containing antimicrobial protein synthesis inhibitors. AN3365

F1-1643
LMV-601: The D609 Isomer for Development
E. AMTMANN
Lumavita AG, Basel,
The PC-PLC inhibitor O-Tricyclo-[5.2.1.0(2,6)]-dec-9-yl-dithiocarbonate K salt (D609) is a mixture of 4 racemic diastereomers.

F1-1647
LMV-601: Efficacy against HSV-2 In Vitro and In Vivo
E. AMTMANN
Lumavita AG, Basel
We reported previously that the PC-PLC inhibitor LMV-601 inhibited transcription of HPV-31 genomes in human transformed keratinocytes

H-1814
GSK2248761, an NNRTI with Activity against Common NNRTI Resistance Mutants, did not Select for NNRTI Resistance Mutations in Two Seven-Day Monotherapy Studies
M. STCLAIR
GlaxoSmithKline, RTP,
GSK2248761 is an NNRTI that is in phase 2b development

H-1815

DS003: A Novel Gp120 Binding Inhibitor with In Vitro Efficacy against Wild-Type and Drug-Resistant HIVSubtypes

Intl. Patnership for Microbicides

F1-1966

A Novel Antibacterial Peptide Deformylase Inhibitor (GSK1322322): First Time in Human Safety and Pharmacokinetics

O. J. NADERER

GSK1322322 (GSK322) is an antibacterial agent in development that inhibits bacterial peptide deformylase (PDF) function, a clinically unexploited target.

F1-1967

A Phase I Study Evaluating the Safety, Tolerability, and Pharmacokinetics of an Intravenous Beta-Lactamase Inhibitor in Healthy Male Volunteers

J. R. BUTTERTON

Merck

MK-7655 is a β-lactamase inhibitor which is being developed for use in combination with PRIMAXIN® IV for the treatment of infections caused by Gram-negative bacteria.

F1-1968

Tolerability, Safety and Pharmacokinetics of Single Oral Doses of AFN-1252 in Healthy Subjects

N. KAPLAN

Affinium Pharmaceuticals,

AFN-1252 is a novel inhibitor of the bacterial fatty acid biosynthesis pathway.

F1-1969

MUT056399: A Single Intravenous Ascending Dose Study in Healthy Human Volunteers

FABpharma

F1-1970

Safety, Tolerance and Pharmacokinetics of Single and Repeat Doses of Oral BC-3781, a Novel Antimicrobial

W. T. PRINCE

BC-3781 is a new pleuromutilin in development for the treatment of acute bacterial infections such as skin and skin structure infections and pneumonia.

F1-1975

A Phase I Single Rising Dose Study Evaluating the Safety, Tolerability and Pharmacokinetics of an Oral Glucan Synthase Inhibitor in Healthy Male Volunteers

M. TRUCKSIS

MK-3118, a semi-synthetic derivative of the natural product enfumafungin, is a potent inhibitor of the synthesis of the fungal cell wall polymer.

F1-862a

LTX-109 is Broadly Active Against a Range of Fungi and Yeasts and is a Potential Topical Agent for Onychomycosis

A. FUGELLI
Lytix Biopharma AS
LTX-109 is a novel antimicrobial drug that is initially being developed as a topical agent for the treatment of skin infections.

F1-2105
Activity BC-3781, a Novel Pleuromutilin Compound, Tested against Clinical Isolates of MRSA, Including Molecularly Characterized Community-Acquired and Hospital-Associated Strains
H. S. SADER
JMI Lab., North Liberty, IA, 2Nabriva Therapeutics AG, Vienna, Austria.
Pleuromutilins inhibit protein synthesis by binding the peptidyl transferase component of the 50S subunit of ribosomes.

E-2050
In Vitro Activities of the Novel Ceragenin, CSA-13, Alone or in Combination with Colistin, Tobramycin and Ciprofloxacin against *Pseudomonas aeruginosa* Strains Isolated from Cystic Fibrosis Patients
C. BOZKURT GÜZEL
Istanbul Univ.

E-2056
In Vitro Antimicrobial Activities of Thiopeptide-Derived EF-Tu Inhibitors
J. L. DZINK-FOX
This study describes the antibacterial properties of novel semi-synthetically derived analogs of the EFT inhibitor GE2270 against a variety of Gram-positive bacterial strains.
of the EFT inhibitors were consistent across large panels of strains

E-2057
***In Vitro* and *In Vivo* Activity of CEM-101, a New Fluoroketolide, Against Mycobacterium avium Complex**
Cenral New York Res. Corp.
A new fluoroketolide, CEM-101, has demonstrated potent activity against several gram postive bacteria.

E-2058
Susceptibility of Clinical Multidrug-Resistant *Mycobacterium tuberculosis* Isolates to a Less Toxic Derivate of Linezolid: PNU100480
J. W. C. ALFFENAAR
Univ. Med. Ctr. Groningen

E-2059
Activity of ACHN-490, a Neoglycoside, against *E. coli* (EC) and *K. pneumoniae* (KP) Isolates from New York City (NYC)
J. QUALE
We describe the activity of ACHN-490, a neoglycoside, or next-generation aminoglycoside (AG)

E-2064

Susceptibility of *Burkholderia thailandenesis* and *Burkholderia pseudomallei* to Protegrin 1

S. H. SIM
DSO Natl Lab, Singapore,

In this study, we determine the stability of commercially synthesized protegrin-1 (PG-1)

F1-2070

NZ17074: An Arenicin-3 Variant Found by HTS Screening of Yeast Libraries

S. NEVE
Novozymes A/S

Arenicin-3 is an antimicrobial peptide isolated from Arenicola marina. Arenicin-3 exhibits a potent and fast antimicrobial activity in vitro against a broad range of multi-resistant pathogenic Gram negative bacteria.

F1-2076

Therapeutic Efficacy of SAR215500 (NZ2114), a Novel Plectasin-Derived Antimicrobial Peptide (AP), in an Experimental Methicillin-Resistant Staphylococcus aureus (MRSA) Endocarditis (IE) Model

Y. Q. XIONG

Plectasin is a defensin-like AP isolated from the saprophytic fungus, *Pseudoplectania nigrella.* SAR215500 (also called NZ2114) is a novel plectasin derivative with potent activity against Gram-positive bacteria.

F1-2079

In Vitro Activity of Mastoparan against Colistin-Susceptible and Resistant *Acinetobacter baumannii*

X. VILA-FARRES

The aim of this study was to investigate a group of peptides as antibacterial agents against colistin-susceptible/resistant *A. baumannii.*

F1-2081

In Vitro Antibacterial Activity, in Mice of Tripropeptin C, A Novel Cyclic Peptide

H. HASHIZUME
Inst. of Microbial Chemistry

Tripropeptin C (TPPC) shows potent in vitro activity against Gram positive pathogens including drug resistant strains, such as MRSA and VRE.

F1-2082

In Vitro Activity of Ltx-109 against MRSA, VISA, VRSA, Daptomycin-Non-Susceptible *Staphylococcus aureus* (DNSSA) andLinezolid-Non-Susceptible *Staphylococcus aureus* (INSSA)

L. D. SARAVOLATZ SR.
Lytix Biopharma AS

LTX-109 is a novel synthetic antimicrobial peptidomimetic drug with a unique membrane lysing mode of action causing ultra -rapid membrane disruption.

F1-2083

Antimicrobial Activity in Human Serum After IV Administration of PMX-30063 in a Phase 1 Study

B. KORCZAK

PMX-30063 represents a new class of antimicrobial agents that mimic the structure and function of antimicrobial peptides.

F1-2090

Inhibition of *S. aureus* DNA Gyrase and DNA Topoisomerase IV Enzymes by the New Fluoroquinolone JNJ-Q2

A. M. QUEENAN

J&J Pharm. Res.

activity of fluoroquinolones (FQ) against bacterial type II topoisomerases depends on their ability to inhibit enzyme aktivity.

JNJ-Q2 is an investigational FQ antibacterial agent with activity against multi-drug resistant *S. pneumoniae* and MRSA.

F1-2094

Activity of WQ-3810, Non-Planar Quinolone, with a Unique N-1 Substituent, against Gram-Negative Pathogens Acquired Mutations in QRDR

T. UESHIMA

Wakunaga Pharmaceutical Co.

WQ-3810 is one of our novel quinolones with a unique N-1 substituent and has potent activity against key nosocomial pathogens including quinolone-resistant *A. baumannii* and *E. coli.*

F1-2096

Drug Interaction and Combination Effects of New Respiratory Quinolone DC-159a and First-Line Anti-TB Drugs in a Murine Model

A. DISRATTHAKIT, N. DOI

DC-159a (D) has significant anti-TB activity both *in vitro* and *in vivo.*

F1-2099

Nosiheptide Analogs: Synthesis and In vitro **Biological Activity of Novel Semi-synthetic Thiopeptide Antibiotics**

W. K. PANG

Cubist Pharmaceuticals, Lexington, MA.

Nosiheptide belongs to a family of structurally related thiopeptide natural products including thiostrepton and nocathiacin. Nosiheptide is produced by *Streptomyces actuosus.*

F1-2101

Thiopeptide GE37468A Analogs with Modifications of the Bis-dehydroalanine (Bis-DHA) Region: Synthesi

Q. LI

Cubist Pharmaceuticals, Lexington, MA.

GE37468A, a member of the thiopeptide family, blocks protein synthesis by binding to elongation factor Tu (EF-Tu) protein. It has excellent *in vitro* potency against *Staphylococcus aureus.*

F1-2111

Peptide Deformylase Inhibitors: Discovery of a Clinical Candidate from a Novel Chemical Class

D. QIN
GlaxoSmithKline, Collegeville, PA.

F1-2118

Anticoagulant Effects of *N*-Chlorotaurine and the Analogs N-Monochloro-2-2-Dimethyltaurine and *N,N*-Dichloro-2,2-Dimethyltaurine

M. NAGL
NovaBay Pharmaceuticals, Inc., Emeryville, CA.

N-chlorotaurine (NCT) is an endogenous chloramine compound produced by human phagocytes as part of the innate immune system response to pathogens.

F1-2119

NVC-422: Towards Developing Preclinical Infected Tissue Models

M. ZUCK
NovaBay Pharmaceuticals, Inc., Emeryville, CA.

P. aeruginosa and *S. aureus* are opportunistic human pathogens implicated in many clinical diseases of the eye and skin.

F1-2122

Core Modification of MBX 1066: Synthesis and Antibacterial Activity of Novel Bis-amidine Antibiotics with Broad-spectrum Activity

J. D. WILLIAMS
Microbiotix

The bis-amidine antibiotic MBX 1066 was found to be very active against a broad range of both Gram-positive and Gram-negative bakteria.

F1-2124

Bactericidal Activity of XF-70 against Isogenic Small-Colony Variant (SCV) Mutants of Methicillin-Susceptible (MSSA) and Methicillin-Resistant (MRSA) *Staphylococcus aureus*

P. VAUDAUX
Destiny Pharma, Brighton, United Kingdom.

XF drugs are topical, membrane-active porphyrin antibacterial agents for topical administration, activity against actively growing or resting, antibiotic-susceptible and multi-drug resistant strains of *S. aureus.*

F1-2125

Efficacy of Novel Antimicrobial Agent NI01 against Biofilm Forming Staphylococci and Investigation into Mode of Action

Wigan and Leigh NHS trust, Wigan, United Kingdom.

In the current study the ability of antimicrobial agent NI01 to prevent or reduce biofilm formation was assessed.

F1-2128

Synthesis, Aqueous Stability, and Anti-Pseudomonal Activity of MC-1, a Novel Siderophore-Conjugated Monocarbam

M. E. FLANAGAN
Pfizer, Groton
Multidrug resistance among Gram-negative non-fermenters such as *Pseudomonas aeruginosa* is a significant public health problem. We have developed a series of novel monocarbam analogs conjugated to a siderophore moiety.

F1-2133
Enhanced Activity of the Siderophore Monosulfactam BAL30072 (BAL) against *Acinetobacter* in Iron-Limited Conditions
M. G. PAGE
Basilea Pharmaceutica Internatinal Ltd, Basel, Switzerland.
BAL is very active against multidrug-resistant (MDR) *Acinetobacter* spp. Its siderophore side chain could enable exploitation of iron-uptake systems to rapidly access the periplasm.

F1-2134
Exploring Novel Inhibitors of FOX-4 Class C β-Lactamase
S. MALLO
Basilea Pharmaceutica Intl. Ltd., Basel, Switzerland.
Plasmidic AmpCs β-lactamases are an emerging threat to the treatment of serious bacterial infections. Novel inhibitors are needed to combat these β-lactamases. To this end we have tested a series of β-lactamase-stable antibiotics (BLSA) and β-lactamase-inhibitors (BLI) against FOX-4, a widespread plasmidic class C enzyme.

F1-2139
In Vitro Activity of the Class A and C β-Lactamase Inhibitor MK-7655
K. YOUNG
Merck & Co.
The efficacy of β-lactam antimicrobials in the treatment of gram-negative infections is being eroded by the increasing emergence of resistance_particularly due to Class A and C β-lactamase production.

F1-2144
In Vitro Anti-Tuberculous Activity of New Oxazolidinones against Drug Resistance Tuberculosis
T. OH
LegoChem BioSci.s Inc., Daejeon, Korea, Republic of.

F1-2145
In Vivo Activity of LCB01-0371, a Novel Oxazolidinone, in Systemic Infection, Soft Tissue Infection, and Thigh Infection Model in Mice
S. JUNG
LegoChem BioSci

F1-2152
Evaluation of CEM-101, a Novel Fluroketolide, in Murine Infection Models
T. M. MURPHY
ViviSource Lab

F1-2156

TP-271, a Novel Oral Fluorocycline for Community-Acquired Respiratory and Biothreat Pathogens

T. GROSSMAN
Tetraphase Pharmaceuticals

H-938a

Antiviral Effect of Vicriviroc (VCV) plus Ritonavir-Boosted Atazanavir (ATV/r) Similar to Tenofovir/emtricitabine (TEM) + ATV/r but Efficacy (%<50c/mL) Inferior as Initial Therapy

L. M. DUNKLE MD
Merck Res. Lab

P04875, a global Phase 2 trial, explored a class-sparing regimen of VCV, a CCR5 antagonist, plus ATV/r vs TEM + ATV/r, as initial antiretroviral therapy, avoiding NRTI and NNRTI toxicity, lipid toxicity and cross-resistance to other PIs.

VCV+ATV/r, despite promising antiviral activity and safety, did not appear to meet the current standards of efficacy for initial therapy of HIV.

H-938b

The Single-Tablet Regimen of Elvitegravir/Cobicistat/Emtricitabine/Tenofovir Disoproxil Fumarate (EVG/COBI/FTC/TDF; Quad) Maintains a High Rate of Virologic Suppression, and Cobicistat (COBI) is an Effective Pharmacoenhancer Through 48 Weeks

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. - **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12.** Rohde, J.: Lancet, 2008, 372, 950-964.

PUBLIC HEALTH NURSING AND SOCIAL ASPECTS OF TUBERCULOSIS – AN ICAAC UPDATE

P. Mikolasova, M. Cervenkova, J. Bordacova, G. Mikolasova, J. Bozik, H. Konosova

E-2047

Combination of Aztreonam and Aminoglycoside for Multidrug-Resistant *Pseudomonas aeruginosa:* A Joint Multicenter Study

H. ARAOKA

ABK and AMK were promising candidates for combination with AZT in treating MDR P.aeruginosa infection

E-2052

Combination Therapy against Carbapenems-Resistant *Pseudomonas aeruginosa* Clinical Isolates

P. KHUNTAYAPORN

Our data suggested that most combinations showed additive effect against CR-PA except only one isolate showed synergist activity between meropenem and amikacin

E-2055

In Vitro Activity of Tigecycline (TGC) in Combination with Colistin (COL) against *Pseudomonas aeruginosa* (PA) Clinical Isolates

S. VOURLI

TGC and COL combination enhances both drugs activity against PA in vitro and may be useful for the management of multidrug-resistant PA infections.

K-336

Vancomycin (VAN) Trough Concentrations and Outcomes in Patients with Methicillin-Resistant *Staphylococcus aureus* (MRSA) Infective Endocarditis (IE)

R. KULLAR

New VAN consensus guidelines recommended targeting higher troughs earlier to improve clinical outcomes. Those pts with higher trough concentrations cleared their bacteremia significantly faster, leading to higher VAN success rates.

K-337

Impact of Vancomycin MIC and Vancomycin serum levels on the Outcome of Methicillin-Resistant *Staphylococcus aureus* (MRSA) Bloodstream Infection

There is a poor parallelism between VAN MIC values obtained with MD and with ET in MRSA strains from BSI episodes. We did not find a correlation between mortality rate and any MIC value, not even in patients treated with suboptimal levels of VAN.

K-339

Relationship of Vancomycin Usage and MRSA Decreased Vancomycin Susceptibility

The inability to find better correlation between V usage and higher MICs may be related to how MRSA infections are acquired. Our data does suggest higher V use is related to higher MICs.

K-340

High Vancomycin Minimum Inhibitory Concentration is a Major Risk Factor for Complicated Catheter-Related Bacteremia due to Methicillin-Susceptible *Staphylococcus aureus*

J. AGUADO

C1-1332

A New Threat from Carbapenem Resistant *Klebsiella pneumoniae* - the New Delhi Metallo-β-lactamase (NDM-1)

H. E. SIDJABAT

This report provides further evidence of the risk of travel related infection and the risk of international dissemination of the newly described NDM in *K. pneumoniae*. The presence of NDM in *K. pneumoniae* ST147 may have the potential to be the next pandemic *K. pneumoniaeclone.*

K-615

Clinical Outcomes of Subjects Receiving Carbapenems for Gram Negative Blood Stream Infections according to Carbapenem MIC

J. ESTERLY

Increasing I MIC was an independent predictor of death and may support mathematical data suggesting the need for lower C susceptibility BPs.

Clinical Outcome of Bacteremia Due to *Klebsiella pneumoniae* Carbapenemase (KPC)-Producing *Klebsiella pneumoniae*

In-hospital mortality was 42% overall and 52% for those with APACHE II score ≥20. Mortality was significantly lower with combination therapy than monotherapy (15 and 59%, respectively; P <0.05). Conclusions: Mortality with KPC-KP bacteremia is high. Combination antimicrobial therapy appears to provide survival benefit over monotherapy.

K-613

Multi-Drug Resistant *Acinetobacter baumannii* (MDRAB) Infections in a London Teaching Hospital: 5 Years of Experience

J. RANGAIAH

A total of 1460 Acinetobacter spp were isolated. Carbapenem resistance was detected in 93.6% (423/452) of A. baumannii.

Bloodstream Infections Caused by ESBL-Producing *Proteus mirabilis:* Risk Factors and Clinical Outcome

In summary, this investigation identifies epidemiological characteristics that distinguish ESBL-producing from non-ESBL-producing P. mirabilis BSIs.

K-611

Case-Control-Control Study to Determine Risk Factors for Having Clinical Samples Positive for CTX-M-Producing *Escherichia coli* in Inpatients in 10 Hospitals of the Paris Area

M. NICOLAS-CHANOINE

Three variables were risk factors of both: born outside Europe, chronic infections and antibiotik treatment dutiny time between admission and inclusion. This is the first study showing that country of birth is a variable associated with CS + for CTX-M producing Ec.

Analysis of Risk Factors for a High Prevalence of Extended-Spectrum β-Lactamase-Producing *Enterobacteriaceae* in Asymptomatic Individuals , Thailand
Fecal carriage of ESBL-producing *Enterobacteriaceae* is very high in asymptomatic individuals in Thailand, with some variations between the provinces. The high prevalence of ESBL-producing *Enterobacteriaceae* may be linked to antibiotic abuse.

K-610
Extended-Spectrum β-Lactamase-Producing *Klebsiella* Spp Isolates and their Impact on Bloodstream Infection Outcome
Klebsiella spp is an important cause of bloodstream infection. ESBL-producing isolates has been increasing since 2000 years. ESBL- producing *Klebsiella* spp isolate is an independent factor associated with poorer outcome in bacteremia

L1-515
Clinical and Economic Outcomes of Intermittent Infusion versus Extended Infusion of Piperacillin-Tazobactam for Gram-Negative Bacteremia
T. W. COOPER
Clinical outcomes of EI were improved over II (p=ns) in patients with Gram-negative bacteremia, while providing statistically significant cost savings to the institution. Additional power is needed to determine if the clinical outcomes of EI are superior to II.

L1-514
Four-Hour Infusions of Piperacillin-Tazobactam Improve Outcomes in Critically Ill Patients
D. S. SCHILLER
A 4-hr infusion is an effective way to dose P-T (3.375gm q8h) in critically ill patients with organisms that have an MIC≤16 mcg/mL. In our population, this resulted in a sigificantly shorter LOS in the ICU for patients with APACHE scores ≥17.

C2-114
Trimethoprim/Sulfamethoxazole Resistant of *Stenotrophomonas maltophilia* in Brazil
S. maltophilia isolates is increasing in Brazil comparing with previous reports, and that mobile genetic elements contribute to TMP/SMX resistance through the *sul*1 and sul-2 genes.

C2-115
First Report on Trimethoprim/Sulfamethoxazole (TMP/SMX) Resistant *Stenotrophomonas maltophilia* in Malaysia
V. NEELA
Molecular Characterization of Group B Streptococci in Japan with Reduced Susceptibility to Penicilin
There have been reports of reduced susceptibility of group B streptococci (GBS) to penicillin G (PCG) from Japan, Hong Kong and the United States. Five of the 437 GBS exhibited reduced PCG susceptibility

H-235
Incidence of and Risk Factors for *Staphylococcus aureus* Bacteraemia in a Nation-Wide HIV-Infected and Uninfected Matched Cohort Study
M. V. LARSEN
Conclusions: We show a declining but high incidence of SAB in HIV infected individuals compa-

red to HIV negative controls. We further show an unevenly burden of SAB among groups of HIV infected persons.

Bloodstream Infections (BSI) Due to Gram-Negative Bacilli (GNB) in Hematological
The predominant GNB were *E. coli* (35%), *K. pneumoniae* (18%), *P. aeruginosa* (15%), *Acinetobacter* spp. (8%), *Enterobacter* spp. (7%), *S. maltophilia* (5%). ESBL production was 41%.

K-240
Extended-Spectrum b-Lactamases (ESBL) and Cephamycinase-Producing (CEPH) *Escherichia coli* and *Klebsiella pneumoniae* in Critically-Ill Patients:
In critically-ill patients, fecal carriage of ESBL or CEPH-producing E. coli or *K. pneumoniae* may be of limited epidemiological and clinical consequence. Local epidemiology should be considered before adopting extraordinary control measures.

K-241
Risk Factors of Carbapenem-Resistant *Klebsiella pneumoniae* Infections: a Case-Case-Control Study
Prior exposure to antimicrobials and surgical procedures are independent risk factors for the development of CRKp infections.

K-242
Risk Factors for Acquisition of Ertapenem-Resistant *Enterobacteriaceae* Infections
Patients who were previously hospitalized, stayed longer in the hospital, had many drains & central lines, & received long duration of antibiotics were at higher risk of acquiring ERE infections.

K-243
Impact of Reporting Extended Spectrum Beta-Lactamase (ESBL) Production on Practitioner Antimicrobial Selection in *Klebsiella bacteremia*

E-1595
Combination Therapy Options for Extreme Drug Resistant Acinetobacter (XDR-AB) Not Susceptible to Colistin and Tigecycline
M. J. DOROBISZ
The combinations of DOR + COL and A/S + COL may be valuable options for patients infected with XDR-AB.

Outcomes of Carbapenem-Resistant Enterobacteriaceae
This study highlights the influence of co-colonization with *A. baumannii* and *P. aeruginosa* on mortality in the largest CRE cohort studied to date and illustrates the impact of 2 major clones of CRE on a population in transit through the health care system.

K-246
Hospital Use of Ertapenem and its Impact on Carbapenem-resistance in *Acinetobacter* spp. and *Pseudomonas* spp. Infections
The use of ertapenem resulted in a lower frequency of *Acinetobacter* spp. and *Pseudomonas* spp. infections. Although carbapenem-resistance in *Pseudomonas* spp. isolates was not associated with ertapenem use, an association was observed with meropenem-resistance in *Acinetobacter* spp.

Multidrug and Carbapenem-Resistant *Acinetobacter baumannii* Infections: Factors Associated to Mortality and Influence of Antibiotic Treatment
Our cohort of patients with ABMDR-C infection is characterised by a very high mortality (49%); severity of patients and inadequate treatment or monotherapy are statistically associated to mortality.

K-250
Clinical Outcomes with Ertapenem as First Line Treatment for Infections Caused by Extended Spectrum Beta-Lactamase (ESBL) Producing Gram-Negative (GN) Bacteria
Clinical response rate was (N=80) 87.5% and microbiological response rate was (N=62) 92%. To our knowledge, this is the largest investigation evaluating clinical outcomes achieved with ertapenem for the treatment of infections caused by ESBL producing GN bacteria. We observed high clinical resolution and microbiological eradication rates associated with ertapenem.

K-316
Emergence of Imipenem Resistant Gram-Negative Bacilli (IR-GNB) in Intestina
L.ARMAND
Intestinal carriage of IR-GNB steadily increased over time. Imipenem resistance determinants were diverse. Exposure to imipenem was the major risk factor for IR-GNB carriage.

K-321
Multidrug-Resistant Gram-Negative (MDRGN) Bacteremia is Associated with Prior Colonization by MDRGN Bacteria among Cancer Patients with Suspected Infection
A. S. HESS

K-323
Influence of Multidrug Resistance on 30 Days-Mortality in *Pseudomonas aeruginosa* Bacteremia
Our results suggest that frequent inappropriate empirical therapy and monotherapy with aminoglycoside contributed to the high mortality rate observed in MDR-PAB.

Safety and Efectiveness of Colistin Intravenous Plus Intrathecally vs Intravenous Carbapenems for Multidrug-Resistant *A. baumannii* Postsurgical Meningitis
A. RODRÍGUEZ
The combination of intravenous and intrathecal colistin is an option at less so safe and efficient as the intravenous carbapenem alone.

K-327
Antimicrobial Therapy with Generic Meropenem (T/GM) is a Risk Factor for Mortality In ICU-acquired Infections by *P. aeruginosa* (IIPa) in Colombia
S. J. RUIZ

K-328
Cefazolin is Effective for *Klebsiella pneumoniae* Bacteremia
T. NG
Older and cancer patients were at increased risk of death from KP bacteremia. Empiric 3GC appeared protective.

K-329

Antibiotic Therapy of Infections Due to Metallo-β-Lactamase (MBL)-Producing *Enterobacteriaceae:*

V. PINTADO

Overall mortality (<30 days) was 28%, related with infection in most cases.

Impact of Empiric Combination Antimicrobial Therapy on Outcome of *Pseudomonas aeruginosa* (PA) Bacteremia

C. SUÁREZ

The use of combination antimicrobial therapy (CT) for PA infection is controversial. Our study failed to demonstrate that the use of CT empirically is significantly associated with better survival.

O-2224a

Reduction of Fluoroquinolone (FQ) Use Is Associated With a Significant Decrease In Methicilin- resistent Staphylococcus Aureus And FQ Resistant Pseudomonas Aeruginosa Isolation Rates In Hospitalized Patiens: A 5- zdar Study

M. Lafaurie

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57.

BURNING ISSUES ON INFECTION NURSING AND SOCIAL WORK (50 ICAAC – CONFERENCE REPORT/BOSTON 11-14.10.2010)

B. Irad, A. Stanova, Z. Tulipan, T. Dóci, V. Krčmery, J. Bartosovic, M. Michalcik, L. Varkonova, M. Prasilova, Y. Rajab, O. Shakurfo, H. Nyadisaba, T. Benson, N. Bujdova, L. Pichonska, R. Babela, V. Noskova, S. Kompas, P. Slavikova, N. Danisova, R. Hochman, E. Misikova

SEU programs in Maseru, Leshoto
St. Elisabeth University (SEU), Bratislava, Slovak Republic
MU Pecs and St. Charles Foucauld Clinic Beirut, Libanon

Abstract: Lectures on 50-th ICAAC in Boston in 2010 are briefly reviewed

A) Nobel Price Lectures

A1) Peter C Doherty – University of Melbourne (1995). Influenza and imunity (+R. Zintennagel)
16 Hemaglutinin types, 9 Neuraminidaza types
H1-H3, maus, pigs, horses, ducks – causes clinical influenza A
H5, H7, H9, poultry - very rarely cause disease in humans
H10-H16 – all animals
History:
1918, 20 – 50 millions deaths (now mutated bird flu virus) H2N2
1957 Asia – 1 million (China, India)
1968 Honk Kong – 0.5 millions peoples
All transmitted to birds via pigs
2009 – swine flu – Mexico (US) – low virulent, H1N1
2005 – Bird flu – China (Vietnam), Indonesia H5N1 – 400 infected, 300 died
1918 – 2008 – Spanish "flu" – Elderly patients were protected by antibodies (NEJA. 2009, 12,361 (20) J. Tanfenbergert, J. Hultin – PCR in Spitzbergs + Tom Bergan
Therapy:
Relenza + Tamiflu (Zanamivir + Oseltamivir – active against N2 and N9.
Relenza is less resistance (less used)
Pandemic influenza – Alogenic drift every year. Yearly 35000 people die. Every year of Flu (Influenza).
Vaccines – 2D1 antigens is from 1918 survivor + attenuated vaccines worldwide.
Targeting the "M2e" protein, less effectine in Elderly. Also pneumococcal vaccine should be used.
Immunology – CD8 T cells responsible "Pistachio vs. Chilli" peptide (Thomas, PC, 2007, J Immunology)

A2) T. Seitz Mass Inst of technology + Yale University
Ribosomes and Antibiotics (Nobel Prize in Chemistry)
1) Antibiotics 30-S and 50-S subunits – ATB binding: RIB X – ATB new RibX active drugs – Linezolid, TET, Ciprofloxacin and all Macrolides
2) AntiTBC drugs – daily 129 patient of TB – 2 millions deaths: New "old" drugs: viomycín, capreomycin , rovamycín, hygromycín

A3) Barry Marshall – Helicobacter in gastric biopsy (1991) (Roben Warren) Nobel Prize. University of Western Australia
"The greatest obstacle to knowledge is not ignorance, but lack of Knowledge. H2 blockers, Etc. Billion USD/year.

1988, 1 million hospital, 6500 deaths/year, 3 billions USD in hospitalisation. Marshall BJ, Warren JR.: Unidentified curved bacilli in the stomach of patients with gastritis and peptic ulceration. Lancet. 1984 Jun 16;1(8390):1311-5. Duodenal ulcer with bacteria 77%, gastric 100% with bacteria. Eradication of Helicobacter is also decreasing the incidence of cancer.
1983. from 67 patients., we can accept only 50 (Study was only 18 patients). (Med. J. Austr.) – 1 st paper was rejected, (which recived later nobel prize)
Double blind study – gastroendoscopy.

B) Update in Antiparasitic therapy

C1) nematodes – soil transmitted, vector transmitted
C2) Plathelmintes (Schistosoma, trematodes, cestodes) – praziquantel
1 milliard peoples are infected
Onchocercosis (1987 from MSD donation programme)
Lymphatic filariosis (1988- 6 SK programme)
Schistosomiasis
Schistosoma haematobium (south Africa) – 50%
Schistosoma mansoni (Brazilia) – 20%
Schistosoma japonicum (China, Japan)
Praziquantel (1979) - 60 mg/kg, ĭ x 1 day, 60-90% cure rates, cheap 0.25 USD/dose
Qamniquine, Metriphonate
Praziquantel has decreased efficacy against immature stages of worms, ACT-S (Artemisins) was better.
New drugs:
Flubendazol – 50x more potent also against microfilariae
Thoxaguins – small molecule cysteine protein inhibitor
Oxadiazoles (Moxidectin) – is better than Ivermectin.
Treatment of filarial infections: Onchocerca vomitus, Wurchezria bancrofi, Brugyia malaii,
Microfilariae are killed by Ivermectin or DEC or albendazol
Adult worms – only DEC or Doxycycline (or albendazol – however work)
Doxycyclin 4-6 weeks due to anti wolbacteria (rickettsia) activity. Mass drug administration (MDA)
DEC + albendazol (6 mg/kg + 400 mg) - administration of SSA 2 x year (5 years)
Ivermectin + albendazol (inside of SSA) – inside of Sub-Saharan Africa 2 x year – Ivermectin)

C) New antimicrobials

1) AN 3365(GSK2151052) – Novel BORON antibiotics against MR GNB (Multiresistant gramnegative bacteria) Phase 1
   Antagonist of t-RNA – tRNA syntethase active against Pseudomonas aeruginosa also against multirerist strains.
2) TP 434 – Fluorocycline/never tegacycline) – Tetrapase Inc.)
   TPT – 71 active against TET-R strainst. Once daily drug, Phase 1
3) BC3781 Mutilins – Phase 2 (Pleumonutilins) – Vienna 2006 (Novartis)
   From Peuotus mutilans.
   Activity similar to Oxazolidinous (Zyvox)
4) New antifungal – E 1210. Einsai Inc. First in class.
5) 6SK – 1322322 Peptide Defromylase inhibitor – Glaxo Phase 1
   tRNA inhibitor Active against both gram-positive and gram-negative bacteria
6) JNJ – Q2 A new broad spectrum qinolone (Antigrampositive) Jinji Comp. (Japan)

7) Oligo – 6 na – oligo peptides: Algeitencity compound to overdue MDR in gramnegative bacteria
F1 – 000 MIC'S from 1-8 against with other anbibiotics Algi – Pharma. Phase 1
8) MK-7655 New Betalactamase inhibitor. Class A/C bLA: inhibitor iwith Imipenem, to overcome KPC – exposing Enterobacteriaceae and Pseudomonas aeruginosa (MSD Merck).

D) HIV in pregnancy

2 millions HIV infected women/year, 430 000 children born. Risk 35% in breastfeeding and 25% in non breastfeeding women. Now is 1 – 2%.

US 2010 DMCT guidelines:

1) Mother on HAART (AZT but not EFA, TDF, ATZ)
2) Caesarean section if viral load > 1000
3) AZT 6 weeks of AZT after that in neonate or NVR day of birth + daily for 6 months in neonate.

WHO guidelines

1) HAART – (EFV in second and third trimester) trm 2-nd trimester
2) 6 month exclusive breastfeeding plus NVR plus HAART in mother plus HAART in child who on NVR. (Shapiro RL, Hughes MD, Ogwu A, Kitch D, Lockman S, Moffat C, Makhema J, Moyo S, Thior I, McIntosh K, van Widenfelt E, Leidner J, Powis K, Asmelash A, Tumbare E, Zwerski S, Sharma U, Handelsman E, Mburu K, Jayeoba O, Moko E, Souda S, Lubega E, Akhtar M, Wester C, Tuomola R, Snowden W, Martinez-Tristani M, Mazhani L, Essex M.: Antiretroviral regimens in pregnancy and breast-feeding in Botswana. N Engl J Med. 2010 Jun 17;362(24):2282-94.)

Reality

1) Rates 50% only NVR of 1/3 of all women received any antiretroviral.
2) Proportion of HIV positive pregnant women were unknown – nobody tasks them.

E) Pediatric tuberculosis

1) MDR – R to RIF and INH 3% of MDR and more – Rwanda, Mozambique , Congo, South Africa, Zambia, Botswana.
XDR – South Africa
Disease (MDR) develops diseases within 12 months of infection. DR are not significant difficult between HIV infected and uninfected cases. Regimen WHO – 3 is the best INH+PZA+RIF, 2 months plus 4 months RIF + INH. Directly observed therapy does not work in children, 50% cases -.negative TB of pediatric latent TB – always > 6 months with high dose of INH contacts – 2 days which are active.
In children, TB is panbacillary (different to diagnosis-no cough).
10 million incidence, 11 within prevalence cases, 18 million deaths. Case finding – 70% (WHO task), 440 000 MDR. Subsaharan Africa + Southeast Asia (20%), 50% India. Foreign travellers to EU/USA
XDR – 5% of MDR
MDR > 15% Russian Federation, USA < 100 cases.
MDR in Europe – Baltic countries. Pediatric ? not in Greece – 2 – 3% MDR.
50% of MDR children with TB are EMB resistant.
DOT with during treatment only is essential. Monitor dose, adherence and toxicity. 4 drugs are necessary within 2 months. Resistance surveillance in children.

F) History of ATB – aminoglycosids

1) Aminoglycosides – GEN 1963, NEO 1951, KANA 1957, KANA 1960, AMI 1972, STM 1943 Sisomicin – new (2010) – New compound – Neoglycosides

Once day dosing 1985 – 2000

ANT 2" – GEN, TOB, KANA	91% USA, Japan 50%
AAC 3' GEN	1%
AAC 6' - KM, TM, AMI, NET	1 – 10%
AAC6' + AAC 3' - GEN - + GEN	1 – 10%

G) Cases in tropical infections

1. Diarhoea: Capillaria Philipinensis + Campylobacter pylori, Clostridium difficile
2. Leishmania from Brazil
3. Chagas from Madrid
4. Monkey bite in Bali – Monkey pox
5. MF traveller to Tanzani, Yellov fever viscerotopic disease, Death after 36 hours of vaccination
   New disease_ Yellow fever Viscerotopic disease (SEA) after vaccination. Lancet 2001 (MMWWR) – 65% mortality, shock, toxic + allergic reaction of vaccine type virus. 0.3/100000 doses. Yong females.
6. Papuan young man with fever – Japanese encephalitis or severe vivax malaria Plasmodium viwax/Plasmodium falciparum – 20% of severe malaria – vivax malaria

H HIV Session – Prevention of HIV

A Success of antiretroviral tx. (M. Hirech) – History of AIDS
1984 – HIV discovered – Mantagnier + Gallo + Barro Sinoussi 36
1989-2009 36 mil., 2 new caus, 4 mil. Deaths, 2-4 mil should be on HAART, 2 mil. on HAART
1986 – In a death sub to a manageable infection 1986 – A7T was discussed
1987 1st population (Fischer+Richman NEJM 1987) 16 deaths vs 1 death. ddI, ddC
1990-92 – ddI and ddC and 3TC, ATC6 175 group, David Katzenstein, Martin Hirsch, Scoth Hammer
1994-95 HAART, Tx, 2 drug, better than 1 drug NEJM 1993, Samuel Katz, Moris Fishbein
1996-2000 – 3 drugs better than 2 drugs, 19 pills 1997 to 1 pill in 2010
2008 – AIDS/deaths decreasing the infections in US from 2000 to 0-10!
2009 – 4 milion people on HAART, more than 2 milion in Subsaharan Africa
Goals from 2011-2015 – shall we start on 350 or 500? Universal screaning yes?...
2011- Rilpivirin, Elvitegra vir - new drugs.

1) Local art prevention
   Antiretrovirals as prevention – Micobicides: VOICE study – oral ..... vs. Oral tamifovir vs.vaginal TRUV. Preexposure prophylaxis – systematic vs. Topic tenofovir.
   (Topical tenofovir) 5% and 10% incidence in young women – CAPRISSA study. 004 Abdool Karin within (AS) .
2) PREP – preexposure oral prophylaxis of HIV ABCCCCP
   - Treatmens as prevention. C-HAART
   - Circumcission male + female
   - Circumcission
   - Couceling + Testing – Test and trecet.

- Preexposition prophylaxis – PREP
- CMTCTP

Completed PREP studies:
- F. Africa, TDE – effective
- USA, IAS Meeting – Tedofovir (CDC)
- South Africa (Caprisa) – local/topical TDF
- Thailand – CDC
- South Africa – VOICE, TDF/FTC vs. TDF vs. Topical TDF

Concerns – resistance, increase of Risks behaviours

3) TEST and TREAT (Treatment as prevention)
Botswana, Manira, Brazil > 50% of those, who need HAART receive HAART (3 millions)
All case mortality after 20 years standardised. New HIV infections a year - 2.7 millions
New HIV – infections – 2-3 millions/year, 90% in SSA.

4) NDM-1 Metalobetalactamases (New Carbapenem – Postantibiotic era!)
Epidemiology: min against – subscript WHO issuwd a paper ot thet NDM-1: New Plague
   1) Where does come from? 1 st discovery in Sweden! (Country with no resistance: D. Young – AAC 2009. Klebsiella pneumonia type 14 + Escherichia coli, from UTi patients for nef ....., plasmid mediated with metalobetalactamase, CMV 4 – cephalosporinase, Rifampin-enzyme against 2010 - Kumarasamyt + British group: Extensive spread from India. to UK, Emergence in UK – again with higher resistance. USA, Canada (3 td), Sweden, Netherlands, Germany, Oman, Australia, Japan, Kenya as well) not very new – KPC (USA) VIM (Italy) – same pattern of resistance.
      1) Antibiotic pressure (India, Pakistan)
      2) Poor hygiene/role of diarrhoaea
      3) Tropical month – good environment
      4) Size of the country – 1.4 mld. People
      5) High role of diarrhoea in the spread
      6) Good health care – surgery etc.
         Arabic countries, UK, USA, Canada, Kenya, Australia – outbreak is already here. Identification is easy
      7) Medical tourism 700 000 from UK
         Therapy:
         - Colistin, Tigecyclin, Fosfomycin, Aztreonam

I) Statius and Infectious Diseases
Statius and pneumonia – 30 days mortality is about 21%, 90 day – 40%.
Challson score (3 and + comorbidities)
Statins in CAP – more than 13 articles
Statin treatment and mortality/statins in CAP – Palmers et al Elsevier
Metanalysis: J. Clin. Epidemiology, BMJ 2006, 333-999
Thomson et al Ard Inten Med. 2008- from comorbidity is necessary. OR for death is much lower in station users
Average patients with pneumonia – 14% heal failure, 11% state, 20% COPP, 20% alcoholism, 20% cancer, 20% prior treatment (many comorbidities in addition)
Cardiovascular effect plus antiinflamatory effect
Statins in sepsis: antiinflamatory and immunimodulatory effect (antioxidant, anticytokine, antiapoptosis activity)

J) Mycobacterium ulcerans (Buruli) etiology

M. ulcerans (Buruli ulcers) – mosquitos oposscurs, - transmitter. It is a zoonosis however, the reservoir is unknown. Sewage – Mosquitos – Yeas, relationship between mosquitos and Mycobacterium ulcerans cases plus excrements of mice/ rats etc. (Pseudocheirus pereginus). - nosocomial contamination of sewage water.

Similar: Koala cryptococcosis

K) Changes in Infections control Habits

- Surgical Prophylaxid from 1992 to 2010 to the present.
- 2-nd before surgery reduces significantly surgical infection (2900 patients) NWJM. 1992, 326, 291-296
- In surgical ..... is substantial variant on 40-60% of SSI (<5% infect). D. Yohoe – 2005, new guidelines
- Surveilance paradox – MRSA surveillance of outcome – SENIC project study inefficacy of Nosocomial Infect. Control 1974-1983 – 170 IC programmes in US started.
- Replacing traditional handwashing (soap + water) with alcohol rub (Lancet Infection Diseases 2001). Pittek and Boyce. Lancet of Infectious Diseases, 2001, april 19 – 20. Compliance with handwashing < 50%, 3 – 4 minutes.
- Alcohol rub-10 seconds.
- Pittek Lancet 2000, 256, 1307
- Hegonet Arch. Lat. Med. 2002, 162, 1037
- Pittek ICAAC, 1999

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57. –

NEW STRATEGIES AND NEW ANTIBIOTICS (ICAAC): EMERGING ISSUES ON NEW STRATEGIES IN HEALTH AND SOCIAL WORK

P. Bukovinova, V. Krcmery, J. Muli Mutuku, E. Misikova

Buikwe gen. Hospital, Slovak Med University, School of Health Trnava, SEUC Tropic programe Buikwe Uganda

Abstract: Overviews of newest data on ID and antimicrobial chemotherapy during last ICAAC are repeated

1) New strategies

HIV: H204-217,230,232,235 /New HIV agent clinical trials HIV H 1808-1815, HIV in pregnancy, H 1662,66,68

TB-L1-516-517 New Moxifloxacin and IMIP dosing in MDR TB. Shorten regime (!)TMC 207 for MDR 21-521a(!)

VAN-S/MRSA, K 336-340 Dosing of VAN and MRSA: VAN serum levels and VAN MIC and outcome of MRSA

Febrile Neutropenia K 1714-1720- bacteriol.

Ps. aeruginosa and ESBL and CRAB tx –

K 331, L1-514-515,

K 316 – Imipenem and 6NB,

K316 – Colistin and vs. i.v.carbapenems in AB,

K 321 – Risk factors for MDR 6NB

K 323 – Mortality in IR – Ps. aeruginosa

K 327 – generic Meropenem and MDR – Ps. aeruginosa in Colombia

K 328 – cefazolin is effective for Kl. pneumoniae

K 329 – ATB tx for infections due to MetaloBLA

K 331 – Empiric combination treatment and outcome of Ps.aeurginosa bact.

K 239 – BSI due to 6NB in traumatology in Russia

K 240 – ESBL + E.Coli: Clinical Impact

K 241-250 – Doripenem, ertapenem, risk factors for ESBL, Tx of ESBL

K 241 – Risk factors for Carbapenem R kl.pneumoniae

K 242 – Risk factors for Ertapenem R Enterobacteriacae

K 243 – Risk factors for ESBL Kl.pneumoniae

K 244 – Carbapenem R outbreak Enterobacteriacae in Brasil

K 246 – Hospital use of Ertapenem and impact on Carbapenem R in ABA ad PA

K 249 – Mortality of MDR and Carbapenem R – AB (CRAB)

K 250 – Clinical outcome of Ertapenem

K 248 – Doripenem efficacy and safety

K 609 – K 616 – ESBL and Carbapenem Resistance

K 609 – Risk factors of ESBL Enterobactericae

K 610 – Risk factors of ESBL

K 611 – Risk factors of ESBL E. Coli

K 612 – Risk factors of ESBL P. mirabilis

K 613 – CRAB – R A. baumanii

K 614 – Carbapenem Resit. Kl.pneumoniae

K 615 – Carbapenem Resit.

K 616 - Carbapenm Resit.
DC2 700-701 NDM ! Resistance India, C1-657 of D NDM-1 among Enterobacteriacae in USA (!) (Kl.pneum., Ent. Cloacae, E.Coli), Tx: Col, Tige
D 755 – ESBL and UTI in Rwanda (!)
O 2224a – Reducing of FLQ use is associated with reduction of MRSA
L1-1044b mortality trends among adults with pneumococcal meningitis
N- 448 Emergence of cross resistance to oseltamivir and zanamivir – 223 R mutation, in pandemic influenza 2009
A1 – 060a – Safety and pharmacology of Sevuparin, a new Heparin to treat severe malaria
E – 2050-52, 2047 combination tx – aztreonam+aminoglycoside – against CRPA and CRAB
E 2055 Tigecyclin + colistin for CRAB, 2050 – novel Ceragenin CSA 13 in combination use AGL
K 2165 - 2167 Endocarditis (Survey in France)
C1 – 1331-1336 ! NDm-1 in Australia, Kenya, USA, Europe, India (!)
Parasitology, Pneumonia, Meningitis
P 1764 BJI Rural African setting in Ghana
P 1765-66 Professional Air travel news , Bibliometry
P 1773 Repeating Malaria films
P 1119 Health public in French military per smell
P 1121 (!) ATB resistance as problem tx in Ugandan children with pneumonia
P 1109 Sublingual arthemeter in severe malaria in children
P 1112 Pulmonary ascariasis
P 1114 Serology in strongyloides
P 1124 Cotrimoxazol use ESBL e. Coli in travelers
P 1125 Eritrean + Sudanese migrants with Malaria !
L1-1028 Time to ATB for community acquired pneumonia
L1-1029 (!) Contradiction between in vitro and clinical outcome in macrolide resistance, Pneumococcal pneumonia
L1-1032 Cardiovascular drugs and outcomes of pts with CAP
L1-1033 Risk factors and outcomes of CAP after influenza pandemic
L1-1044 Outcomes of pneumonia in USA - in CAP in last 10 years
Fungal infections: M1046-1069
M 1046 High doses of lipoAMP – 10 mg/kg of initial tx of …mycosis (AMBI2Y60 trial)
M 1047 Fugiscope – rare FI database
M 1048 Skin … by fusarium … of dissemined Fusariosis
M 1049 Risk stratification of early mortality
M 1051 Fungal peritonitis
M 1052 Invasive FI in transplatt pts (TRANSSNET)
M 1061 IDEA study – Immediate versus Different Antifungal tx in high risk patients
M 1067 Impact of changes in Candidemia on outcome
M 1068 Exposure to anti… antibiotics on the risk of C. glabrata(!)
M 1069 Ca… of 21 century – no changes in mortality despite increasing of antifungals
HIV
H204 ARIES trial – Abacavir vs. other ARV
H205 Dual maintance tx Raltegavir + Atazanavir
H206
H207 NVR 200mg vs NVR 400mg
H216 First time HAART failure

H323 Tedofovir/embicizebin/EFV in TBC/HIV (ANRS trial)
H208 New anti HIV agents
H209 drug ionteractions in 1st line
H210 SAT vs DOT in drug users and HIV
H213 Lack of mycosis agent P.carinii pneumonia
H214 Efficacy of Raltegavir + ZOP/Rital
H230 ! Vitamin D defficacy in HIV – use vitamin D
H235 HIV infection and SAB – S.aureus bacteriemia
H1808 – 1815 new antiHIV drugs in clinical trials phase 3 (TMC 278, KineXa, CCR5, GSK 2248761-new NNTR, DS-003 novel Binding protein inhibitors)
H1662 Low birth weight associated with HAART in Zambia
H1666 Use of Lopinavir during pregnancy in Mexico
H1668 Nelfinavir based HAART in pre... of infant,, AE in Zimbabwe

2) New antimicrobials – ICAAC

Betalactam inhibitors – NXL 104 + ceftazoline
(E 801-808) Ceftazoline (E-813)
E822 – Razapenem, a new carbapenem
E824 – Doripenem
E816 – CXA 101 – CEF against Ps. Aeruginosa
F1-840 – new antigungal candin E1210
F1-831 Novel Fab I inhibitor
F1-832 M4TO563 – mutilius
F1-833 AFN 1252
F1-834 Novel dihydroquinazoline
F1-835 RX 101005 – DHFR inhibitor

Antifungals
F1-847 MK3118 New Emfumafungin (Emf Mucafungin) (AF)
F1-855 2-4 Diaminoquinazolin
F1-858 F6 3622-F6 34 Diaminoquinazoline
F1-850 Matelloenzyme inhibitor (AFU)

Antiretrovirals
H933-937 new antiretrovirals (ARV HIV)
H933 OBP-601=Festinavir
H934 6SK 1349572- Integrase Inhibitor
H937 P1-100 New protease Inhibitor
H938b – Elvitegravir
H938 – single tablet Elvitegravir/Cobiscat/Emticitabin(Gilead) –integr. Inhibitor

Glycopeptides
E1552 Telavancin/Daphericin dalbavancin
E1565-67 Oritavancin – against MRS
E1557 CEM-102 (Fusidic Acid)
E1570 Nisin – antiMRSA ATB
E1581 Dalbavancin – against MRSA
E1569 PTK 0796 – against MRSA, VRE

E1588 PTK against BSI – 900 USA

A1-060 antimalarials: Sevuparin (Heparin, Duraflow, Sweden)

New antibiotics, various classes
E2056 Thiopepetides (Novartis) EF-tu inhibitor
E2057 CEM 101 – new Fluororetolide, NY Res.
E2058 PNU 100480 MDR-MTBC
E2059 ACUN u90 – Neoglycozide – Kl.Pn., ESBL
E2064 Protegrin –1 = D50 (Singapur) MR6NB
F1-2070 NZ17074 Arenicin – Staateus serum DK
F1-2076 SAR 2015500 (NZ2114) Plectasin (Sanofi) – against MRSA
F1-2079 Mastoparan – against CRAB –COL Resist.
F1-2081 Novel cyclic peptide. Tripropeptin C
F1-2082 LTX109 – Lytix pharma – MRSA
F1-2083 PMX-30063, Poly-Medix
F1-2090 JNJ-Q2- new Quinolone, J+J Res Pharma
F1-2094 WQ-3810, new N1-Quinolone (Wakunaga Pharma, Japan)
F1-2096 DC 159a – antiTB Japanese drug
F1-2105 BC3781, new Pleuromutilin – Nabriva therap. Vienna (MRSA)
F1-2099 Nosiheptide-Thiopeptide ATB, Cubist
F1-2101 GE 37468-A, against MRSA, Cubist
F1-2105 BC 3781 – Pleuromutilin, Nabriva (Pharma Austria)
F1-2111 Peptide Defensives base inhibitor (Glaxo)
F1-2118 Chlorotaurins, Nova Bay, USA NVC-422
F1-2122 MBX-1066 BisAmidine – Microbiotix
F-2124 XF-70, Destiny Pharma UK, anti MRSA
F-2125 (small colony variant mutants) + N101
F-2128 Siderophore conjugated monobactam (Pfizer)
F-2133 Siderophore monosulbactam – Basilea (BAL 30072)
F-2134 FOX-4 class C BL-inhibitor, Basilea – against CRAB
F-2139 MK 7655, class A-C: bLA inhibitor (Merck)
F1 2144-5 New antiTB oxazolidinom – UgoChem, Korea, LCB 01-0371
F-2152 CEM 101 – New Fluororetolide
F-2156 TP-271 Tetraphase Pharma, New Fluorocycline
F-2157 TP-434 Tetraphase Pharma, New Fluorocycline

Natural Products
F1-1600 Oligo-6 Alginate (Algipharma, Norvay)
F1-1609 TBHQ – Butylhydroquinone (Syntopix)
F1-1610 Epigallocatectin gallate, Osaka Pharma
F1-1611 Tripropeptin, Tokyo Pharma, Japan
F1-1612 CB183315 – novel cycliclipopeptide (Cubist)
F1-1614 Cerium, Chitosans, Hamaletamins (Ponto)
F1-1617 Walkmycins – HistidinKinase Inhibitors (Nar..)
F1-1619 CB– new Polymyxin (Cubist)
F1-1632 BisIndol Carbapenemase Inhibitor (Microbiotix)
F1-1635 LPX-C Inhibitor CHIR-090 (Novartis)

F1-1638 AN-3365 Boron Synthesis Inhibitor (Anacor)

F1-1643 LMV-601, D609 Isomer (Humanita, CH) (antiherpetic, antiviral agent)

H 938a, 938b – Vicriviroc, Elritegravir – anti HIV (Gilead) – ICCR5 –antagonist, integrase inhibitor (Merck)

References:

1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57.

50TH ICAAC: BEST IN INFECTIONS DISEASES
Literature Review 2010

Robert A. Bonomo, MD

American Society of Microbiology ICAAC, Boston Mass US

Structural basis of preexisting imunity to the 2009 N1H1 pandemic influenza virus.
Thus, antigenic similarity between the 2009 and 1918-like viruses provides an explantion for the age-related imunity to the current influenza pandemic.

Instruction of broadly neutralizing N1H1 influenza antibodies by vaccination.
Cross-neutralization of H1N1 subtypes elicited by this approach provides a basis for the development of a universal influenza vaccine for humans.

Seasonal influenza vaccine provides priming A/H1N1 immunization.
Sci Transl Med. 2009 Dec. 23, 1(12):12re1
The vaccine given without adjuvant significantly reduced viral load in the lungs but did not protect from infection.

Oseltamivir ring prophylaxis for containment of 2009 H1N1 influenza outbreaks.
From june 22 through June 25, 2009, four outbreaks of infection with the pandemic influenza A (H1N1) virus occurred in Singapore military camps. We report the efficacy of ring chemoprophylaxis (geographically targeted contrainment by means of prophylaxis) with oseltamivir to control outbreaks of 2009 H1N1 influenza in semiclosed environments. All personnel with suspected infection were tested and clinically isolated if infection was confirmed. In addition, we administered postexposure ring chemoprophylaxis with oseltamivir and segregated the affected military units to contain the spread of the virus.
A total of 75 personnel (6.4%) were infected before the intervention, and 7 (0.6%) after the intervention. There was a significant reduction in the overall reproductive number from 1.91 before the intervention to 0.11 after the intervention. Oseltamivir ring chemoprophylaxis, together with prompt identification and isolation of infected personnel, was effective in reducing the impact of outbreaks of 2009 H1N1 influenza in semiclosed settings.

Bode LG
Preventing surgical-site infections in nasal carriers of Staphylococcus aureus.
CONCLUSION: The number of surgical-site S. aureus infections acquired in the hospital can be reduced by rapid screening and decolonizing of nasal carriers of S. aureus on admission.

Yong D
Characterization of a new metalo-beta-lactamase gene, bla (NDM-1) and a novel erythromycin esterase gene carried on a unique genetic structure in Klebsiella pneumoniae sequence type 14 from India
Antimicrob Agents Chemother 2009 Dec, 53(12): 5046-54. Epub 2009 Sep 21.

Kumarasamy KK
Emergence of a new antibiotic resistance mechanism in India, Pakistan and the UK: a molecural, biological and epidemiological study.

Lancet Infect Dis.
Gram negative Enterobacteriaceae with resistance to carbapenem conferred by New Delhi metalo-beta-lactamase 1 (NDM-1) are potentially a major global health problem. We investigated the prevalance of NDM-1, in multidrug-resistant Enterobacteriaceae in India, Pakistan, and the UK.
Enterobacteriaceae isolates were studied from two major centres in India–CHennai (South India), Haryana (North India) – and those reffered to the UKęs national reference laboratory.
Antibiotic susceptibilities were assessed, and the presence of the carbapenem resistance gene bla (NDM-1)
Many of the UK NDM-1 positive patients had travelled to India or Pakistan within the past year, or had links with these countries. The potential of NDM-1 to be a worldwide public health problem is great, and co-ordinated international surveillance is needed.

McMahon
Antibody levels and protection after hepatitis B vaccine: results of a 22-year follow-up study and response to a booster dose.
The protection afforded by primary immunization with plasmaderived hepatitis B vaccine during childhood and adulthood lasts at least 22 years. Booster doses are not needed.

Stauffer
Diagnostic performance of rapid diagnostic tests versus blood smears for malaria in US clinical practice.
Clin Infect Dis.
Approximately 4 milion US travelers to developing countries are ill enough to seek health care, with 1500 malaria cases reported in the United States annually. The diagnosis of malaria is frequently delayed because of the time required to prepare malaria blood films and lack of technical expertise. An easy, reliable rapid diagnostic test (RDT) with high sensitivity and negative predictive value (NPV), particularly for Plasmodium falciparum, would be clinically useful.
Malaria was noted in 95 (11%) of the 852 samples. The RTD had superior performance than the standard Giemsa thick blood smear (p = .003). The RTDęs sensitivity for all malaria was 97% (92 of 95 samples), compared with 85% (81 of 95) for the blood smear, and the RTD had a superior NPV of 99.6%, compared with 98.2% for the blood smear (p = .001).
This operational study demonstrates that the US Food and Drug Administration-approved RTD for malaria is superior to a single set of blood smear performed under routine US clinical laboratory conditions. The most valuable clinical role of the RTD ist in the rapid diagnosis or the exclusion of P. falciparum malaria, with is particularly useful in outpatient setting when evaluating febrile travelers.

Lo SC
Delection of MLV-related virus gene sequences in blood of patients with chronic fatigue syndrome and healthy blood donors.
Proc Nati Acad Sci U S A.
Futher studies are needed to determine whether the same strong association with MLV-related vireses is found in other groups of patients with CFS, whether these viruses play a causative role in the development of CFS, and whether they represent a threat to the blood supply.

Kontoylannis DP,
Prospective surveillance for invasive fungal infections in hematopoietic stem transplant reci-

pients, 2001-2006: overview of the Transplant-Associated Infection Surveillance Network (TRANSNET) Database
Clin Infect Dis. 2010 Apr.
The Transplant Associated Infection Surveillance Network, a IFIs occurring betweed March 2001 and March 2006.
We identified 983 IFIs among 875 HSCT recipients.
CONCLUSIONS: In this national prospective surveillance study of IFIs in HSCT recipients, the cumulative incidence was highest for aspergillosis, followed by candidiasis. Understanding the epidemiologic trends and burden of IFIs may lead to improved management strategies and study design.

Walker LM,
Broad and potent neutralizing antibodies from an African donor reveal a new HIV-1 vaccine target.
Science. 2009 Oct 9, 326
The results provide a framework for the desing of new vaccine candidates for the elicitation of bNAb responses.

Hatano H,
Evolution of integrase resistance during failure of integrase inhibitor-based antiretroviral therapy.
J Acquir Immunite Defic Syndr. 2010 Aug 1,54
This resistance evolution is gradual and associated with declines in replicative capacity.

van Sighem AI,
Life expectancy of recently diagnosed asymptomatic HIV-infacted patients approaches that of uninfected individuals.
AIDS. 2010 Jun 19,24
The life expectancy of asymptomatic HIV-infected patients who are still treatment-naive and have not experienced a CDC-B or C event at 24 weeks after diagnosis approaches that of non-infected individuals. However, follow-up tiome is short compared to the expected number of years lived.

Mortality of HIV-infected patiets starting potent antiretroviral therapy: comparison with the general population in nine industrialized countries.
Int J Epidemiol. 2009 Dec , 38(6): 1624-33. Epub 2009 Oct 9.
In industrialized countries, the mortality experience of HIV-infected patients who start ART and survire the first 6 months continues to be higher than in the general population, but for many patients excess mortality is might be prevented by earlier diagnosis of HIV followed by timely initiation of ART.

Severe P,
Early versus standard antiretroviral therapy for HIV-infected adults in Haiti.
The New England journal of Medicine 2010, 363(3): 257-65.
Early initiation of antiretroviral therapy decreased the rates of death and incident tuberculosis. Access to antiretroviral therapy should be expended to include all HIV-infected adults who have CD4+ T-cell counts of less than 350 per cubic milimeter, including those who live in areas with limited resources.

Severe P,
Abacavir-lamivudine versus tenofovir-emtricitabine for initial HIV-1 therapy.
The New England journal of Medicine 2009, 361(23): 2230-40
Abacavir-lamivudine of tenofovir disoproxil fumarate (DF) – emtricitabine plus efavirenz or ritonavir-boosted atazanavir.
In patients with screening HIV-1 RNA levels of significantly shorted in patients randomly assigned to abacavir-lamivudine than in those assigned to tenofovir DF-emtricitabine.

Thompson MA,
Antiretroviral treatment of adult HIV infection: 2010 recommendations of the International AIDS Society-USA panel.
JAMA. 2010 Jul 21,304(3):321-33.
CONCLUSIONS: Patient readiness for treatment should be confirmed before initiation of antiretroviral treatment. Therapy is recommended for asymptomatic patients with a CD4 cell count < or = 500/ microL, for all symptomatic patients, and those with specific conditions and comorbidities.

Abdool Karim SS,
Timing of initiation of antiretroviral drugs during tuberculosis therapy.
New England Journal of Medicine 2010, 362(8):697-706.
The initiation of antiretroviral therapy during tuberculosis therapy significantly improved survival and provides further impetus for the integration of tuberculosis and HIV service.

Makadzance AT,
Early versus delayed initiations of antiretroviral therapy for concurrent HIV infection and cryptococcal meningitis in sub-Saharan Africa.
Clinical Infectious Diseases 2010, 50(11):1532-8
In resource-limited setting where CM management may be suboptimal, when compared with a delay of 10 weeks after a CM diagnosis, early initiation of ART results in increased mortality.

Arribas JR,
The MONET trial: darunavir/ritonavir with or without nucleoside analogues, for patients with HIV RNA below 50 copies/ml.
AIDS. 2010 Jan 16,24(2):223-30.
CONCLUSIONS: In this study for patients with HIV RNA less than 50 copies/ml on other antiretroviral at baseline, switching to DRV/r monotherapy showed noninferior efficacy versus triple antiretroviral therapy.

Celum C,
Acyclovir and Transmission of HIV-1 from Persons Infected with HIV-1 and HSV-2.
New England Journal of Medicine 2010,362(5):427-39
Daily acyclovir therapy did not reduce the risk of transmission of HIV-1, despite a reduction in plasma HIV-1 RNA of 0,25 log(10) copies per milliliter and a 73% reduction in the occurrence of genital ulcers due to HSV-2.

Chasela CS,
Maternal or infant antiretroviral drugs to reduce HIV-1 transmission.
N Engl J Med. 2010 Jun 17,362(24):2271-81.
We evulated the efficacy of a maternal triple-drug antiretroviral regimen of infant nevirapine pro-

phylaxis for 28 weeks during breast-feeding to reduce postnatal transmission of human immunodeficiency virus type 1 (HIV-1) in Malawi. We randomly assigned 2369 HIV-1- positive, breast-feeding mothers with a CD4+ lymphocyte count of at least 250 cells per cubic milimeter and their infants to receive a maternal antiretroviral regimen, infant nevirapine, or no extended postnatal antiretroviral regimen (control group) . All mothers and infants received perinatal prophylaxis with singledose nevirapine and 1 week of zidovudine plus lamivudine.
Results: Among mother-infant pairs, 5.0% of infants were HIV-1-positive at 2 weeks of life. The estimated risk of HIV-1 transmission between 2 and 28 weeks was higher in the control group (5.7%) than in either the maternal – regimen group (P=0.02), and 2.6% in the infant – regimen group (P<0.001). The proportion of woman with neutropenia was higher among those receiving the antiretroviral regimen (6.2%) than among those in either the nevirapine group (2.6%) or the control group (2.3%). Among infants receiving nevirapine, 1.9% had a hypersensitivity reaction.
CONCLUSIONS: The use of either a maternal antiretroviral regimen or infant nevirapine for 28 weeks was effective in reducing HIV – 1 transmission during breast – feeding.
(ClinicalTrials.gov number, NCT 00164736.)

Eron JJ

Switch to a raltegravir – based regimen versus continuation of a lopinavir – ritonavir – based regimen in stable HIV – infected patients with suppressed viraemia (SWITCHMRK 1 and 2): two multicentre, double – blind, randomised controlled trials.

Lancet 2010, 375(9712): 396-407.14.

Although switching to raltegravir was associated with greater reductions in serum lipid concentrations than was continuation of lopinavir - ritonavir, efficacy did not establish non-inferiority of raltegravir to lopinavir – ritonavir.

Shapiro RL

Antiretroviral Regimens in Pregnancy and Breast – Feeding in Bocwana.

New England Journal of Medicine 2010, 362 (24): 2282 – 94.

The most effective highly active antiretroviral therapy (HAART) to prevent mother – to – child transmission of human immunodeficiency virus type 1 (HIV-1) in pregnancy and its efficacy during breast – feeding are unknown.
METHODS: We randomly assigned 560 HIV – 1 – infected pregnant women.

References:
1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57.

BURNING ISSUES IN SOCIAL WORK AND HEALTH ISSUES IN TROPIC:

J. Muli Mutuku, I. Kmit, J. Suvada, G. Mikolasova, J. Bartosovic, M. Michalcik, J. Bozik, L. Varkonova, M. Prasilova, Y. Rajab, O. Shakurfo, H. Nyadisaba, L. Benson, B. Timona Alumbashi, N. Bujdova, L. Pichonska, R. Babela, B. Irad, V. Noskova, S. Kompas, P. Slavikova, N. Danisova, R. Hochman, E. Misikova, F. Doci, Z. Tulipan

SEU Programme, Sh Raphael and Sl Bakhita Orphanage, Nairobi, Kayole, Kenya

1. **Introduction of priority review vouchers to encourage development of new medicines for neglected diseases**
   Lancet 2010, 376: 922-27
   David B Ridley

Every year 1 billion people worldwide are affected by tradionally neglected diseases, sucha s malaria, tuberculosis, leishmaniasis, and lymphatic filariasis, which impose tremendous public health burdens. Goverments, foundations, and drug manufactures have, however, started to support development of new treatments. European Union Member States have been leaders in implementing so- called push mechanism(payment for drug development) and pull funding (reward for output), such as the advance market commitment, which creates a market for vaccines by guaranteeing prices. We propose an additionall stepthat could be taken to encourage development of medicines for neglected diseases. A priority review voucher scheme, asi s already in place in the USA, would reward a manufacturer that developed a new medicine for neglected diseases with a voucher that could be redeemed for priority review of a future medicine, probably a potential blockbuster drug. Unlike the US system a European voucher would also accelerate pricing and reimbursement decisions. This scheme would be likely to provide substantial benefits to voucher holders, society, and public health organizations.

Durations of accelerated review (days)

Country	Branded drug	Generic drug
Czech republic	289	90
Denmark	81	14
Germany	0	0
Ireland	83	30
The Netherlands	180	60
Slovakia	426	400
Switzerland	180	180
UK	0	0

2. **Efficacy of pentavalent rotavirus vaccine against severe rotavirus gastroenteritis in infants in developing countries in sub-Saharan Africa. A randomised, double-blind, placebo-controlled trial**
   Georg E Armah
   Lancet 2010, 376: 606-14

In our multicentre, double-blind, placebo-controlled trial, undertaken in rural areas of Ghana and Kenya and an Urban area of Mali, we randomly assigned infants aged 4-12 weeks without symptoms of gastrointestinal disordes in a 1:1 ratio to receive three oral doses of pentavalent rotavirus vaccine 2 mL or placebo at around 6 weeks. 10 weeks and 14 weeks of age.

5468 infants were randomly assigned to receive pentavalent rotavirus vaccine (n=2733) or placebo (n=2735). 2357 infants assigned to vaccine and 2348 assigned to placebo were included in the per-protocol analysis. 79 cases of severe rotavirus gastroenteritis were reported in 2610.6 person-years in the vaccine group, compared with 129 cases in 2585.9 person-years in the placebo group, resulting in a vaccine efficacy against severe rotavirus gastroenteritis of 39.3% (95%CI 19.1-54.7,p=0.0003 for efficacy>0%). Median follow-up in both groups was 527 days starting 14 days after the third dose of vaccine or placebo was given. 42(1.5%) of 2723 infants assigned to receive vaccine and 45 (1.7%) of 2724 infants assigned to receive placebo had a serious adverse event within 14 days of any dose. The most frequent serious adverse event was gastroenteritis (vaccine 17(0.6%), placebo 17(0.6%)

3. **Efficacy of pentavalent rotavirus vaccine against severe rotavirus gastroenteritis in infants in developing countries in Asia: A randomised, double-blind, placebo-controlled trial**

   K Zaman

   Lancet 2010, 376, 615-23

2036 infants were randomly assigned to receive pentavalent rotavirus vaccine (n=1018) or placebo (n=1018) 991 infants assigned to pentavalent rotavirus vaccine and 978 assigned to placebo were included in the per-protocol analysis. Median follow up from 14 days after the third dose of placebo or vaccine until final disposition was 498 days (IQR 480-575). 38 cases of severe rotavirus gastroenteritis (Vesikari score≥11)were reported during more than 1197 person-years of follow up in the vaccine group, compared with 71 cases in more than 1156 person years in the placebo group, resulting in a vaccine efficacy of 48.3% (95% CI 22.3-66.1) against severe disease (p=0.0005 for efficacy>0%) during nearly 2 years of follow-up. 25(2.5%) of1017 infants assigned to receive vaccine and 20 (2.0%) of 1018 assigned to receive placebo had a serious adverse event within 14 days of any dose. The most frequent serious adverse event was pneumonia (vaccine 12 (1.2%), placebo 15(1.5%).

In infants in developing countries in Asia, pentavalent rotavirus vaccine is safe and efficacious against severe rotavirus gastroenteritis and our results support expanded WHO recommendations to promote its global use.

4. **Influenza A (H5N1) Viruses From Pigs, Indonesia**

   Emerging Infectious Diseases. www.cdc.gov/eid. Vol.16, No. 10, October 2010-10-08

   Chairul A. Nidom

Pigs have long been considered potential intermediate hosts in which avian influenza viruses can adapt to humans. To determine whether this potential exists for pigs in Indonesia.

We found that 52 pigs in 4 provinces were infected during 2005-2007 but not 2008-2009.

Our data suggest that pigs are at risk for infection during outbreaks of influenza virus A(H5N1) and can serve as intermediate hosts in which can adapt to mammals.

5. **Human Monkeypox Outbreak Caused by Novel virus Belonging to Congo Basin Clade, Sudan**

   Emerging Infectious Diseases . www.cdc.gov/eid. Vol.16 , No.10, October 2010-10-08

   Pierre Formenty

To determine the outbreak source of monkeypox virus (MPXV) infections in Unity State, Sudan, in November 2005 we conducted a retrospective investigation.

Human to human transmission up to 5 generations was described.
Our results indicate that MPXV should be considered endemic to the wetland areas of Unity State. This finding will enhance understanding of the ecological niche for this virus.

References:
1. Mitterpachova, E., Kalatova, D., Knoskova, E., Bozik, J., Bugri, S., Tonzar, D., Vallova, E.,: J. Tropic Health and Social Work, Vol. 5., 2009, 1-88. – **2.** Kalatova, D., Knoskova, E., Bozik, J., Vallova, E., Bugri, S., Tonzar, D.,: J. Tropic Health and Social Work, Vol. 4, 2008, 2-99. – **3.** Horvathova, E., Kalatova, D., Bozik, J., Knoskova, E., Bugri, S., Tonzar, D.: J. Tropic Health and Social Work, Vol. 6, 2010, 1-3. – **4.** Alio, A.: Lancet. 2010, 373, 2562-63. – **5.** Hogan, M.: Lancet 2010, 375, 1609-1610. – **6.** Filippi, V.: Lancet 2010, 375, 1999-2001. – **7.** Blacl, J.: Lancet 2010, 375, 1969-1987. – **8.** Nbanga, J.: Lancet 2010, 375, 2250-2254. – **9.** Rajarantan, J.: Lancet, 375, 1988-1999. – **10.** Rousran, K.: Lancet 2010, 375, 2024-2032. – **11.** Bhuta, ZA: Lancet 2010, 375, 2032. – **12**. Rohde, J.: Lancet, 2008, 372, 950-964. – **13.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57.

ACINETOBACTER – VIRULENCE, RESISTANCE AND PATOGENICITY
(Congress Report 1.- 4. 2010)

R. Cauda, V .Krčméry

Catholic University, Sacred Heart, CU plus SEUC trop. programm, Policlinic Gemelli Institute of Infect. Dis, Rome

On group 1 – 4 International conference on Acinetobacter and its pathogenicity took place in Roma 3 University in Roma/Italy. We have published a poster on Tigecycline susceptibility of Acinetobacter (1) baumannii in 256 bloodstream isolates, on social impact of ID (2).

Major scientific message.

1. Virulence of multidrug resistance /Carbapenem resistant/ A.baumannii (CRAB) is lower than in susceptible strain therefore mortality despite the resistance is lower than expected (p.7, p.54 – Y.Swani et al., p.6 p.7) .
2. New antiAB ATB – tigecycline (Abstr. 111, poster 64), Krcmery et al. – only 12% resistance
   – doripenem (active agenst p.44, p.91). CRAB – MICC 4 (100% susceptible)
   – rifampicin (p.105, p.58) should be added to AMP/SULB and more often CRAB active ATB
3. Resistance to carbapenems in SE Asia and mediterranean Europe is emerging, ostly in Acinetobacter baumannii and Pseudomonas aeruginosa (15-40%).
4. Mechanism of resistance (Nordman et al. p.33)

Mechanism of resistance in Acinetobacter baumannii to carbapenems:

1. metallo – beta – lactamases (Zn, Serin class)
2. PBP – penicillin binding protein
3. overproduction efflux pumps – efflux
4. membrane inpermeability (OPR-A, OPR-O genes)
5. Exposure of structural porins (Opr P, Car O, Omp 33/36)

All genes of betalactamases are on plasmids and pumpa-zones others are on chromosome. So the metallo – beta – lactamases OXA - genes are epidemiologically and are responsible for rapid spread.

References:

1. Liskova, A., Konosova, H., Matel, A., Tonzar, D., Bugri, S., Sokolova, J.: Susceptibility of Tigecyclin in AB. Abstracts, 4-th Inf Congress on Acinetobacterm Rome, 2010, Universita Tre Roma, p. 110. – **2.** Hvizdak, F., Ondrusova, A., Bucko, L., Konosova, H., Olah, M., Knoskova, E., Wiczmanydova, D., Kalatova, D., Treslova, V., Namalunda, V.: Three years experience of antimalnutrition strategies. In: Namulanda, V.: Malnutrition, tropical diseases and social distress. MPC Nairobi 2006, 49-57.

LIFE IN NAIROBI SLUMS (KENYA)

Benson Alumbasi Timona

St. Kizito habilitation centre for street-children St. Kizito, SEUC Nairobi in Kenya.

Abstract
Most street children come to the streets from the slums and squatter areas which proliferate in urban areas. “Inner City” slums are to be found in the towns and cities of the first world, but it is especially in the developing countries that rapid urbanization has been accompanied by the mushrooming of slums. Poor planning and lack of a viable housing policy for creating affordable low income residences for the urban poor, have contributed to the growth of these slums in Nairobi. In these areas, living conditions have deteriorated over the years. Along with the lack of housing, all the essential amenities are lacking; clean water, sanitation, rubbish and sewage disposal, street lighting and the provision of health centers. These slums are a potential breeding ground for most infections. A new trend in the Nairobi slums is the construction of jerry-built storey blocks, with rooms for renting.

Introduction
In some cases, efforts have been made to improve living conditions in Nairobi, but such initiatives are an exercise in futility, as long as the question of land ownerships is not addresses. Almost all the land in the Nairobi slums is unregistered and, in most cases, belongs to the City Council. There are some private land-owning consortia. Land ownership is used to oppress slum dwellers. Developers, who are often real or imagined land grabbers, regularly demolish structures, thus adding to the toll of the homeless. The rainy season poses a particular hazard to slum dwellers. Inadequate drainage often the lack of any drainage system at all- results in the flooding and sweeping away of squatter housing. The “el nino” rains of 1998 rendered many slum dwellers homeless. Once people lose their homes, through whatever cause, there is no mechanism for relocating them elsewhere. Homelessness is a direct cause of migration to the street.
Lack of living space is another feature of slum life, quite apart from the lack of recreation areas of children. Normally, an entire family inhabits a single room. The physical discomfort and lack of privacy involved makes children opt for the streets, especially if the mother has sex clients or is an alcoholic.

Results
Rapid urban growth has stimulated rural urban migration. In colonial time’s urban migration was restricted to able bodied young men who came to work in the upcoming industries and in the social services. Very few women found their way to the urban centre in the colonial period, unless they were domestic servants of affluent Europeans and Asians or were wives of Africans, working in “white-collar” jobs. Political independence was swiftly followed by unrestricted rural-urban migration, in which migrants sought the salaried employment and the better life which they believed could be found in the towns and cities.[1]
The swelling ranks of urban migrants soon came face to face with the realities of unemployment and under-employment. In order to survive, landowners became squatters. The prohibitive cost of housing even forced those who were lucky enough to be employed to join them in the squatter

[1] UNICEF, The state of the world’s children, (Oxford university: Press, 1996), 38.

areas. Women migrants were the hardest hit, because many of them had no skills or even any formal education. Consequently, they found themselves small traders, unlicensed hawkers and even as prostitutes. Many of these women have had unstable liaisons over the years with men, the majority of whom already have wives based in a rural home. These so-called single mothers end up with several children, fathered by different men. The children lack proper parental care and affection and frequently end up taking care of themselves at a tender age.[2]

Conclusion

The 2006 UNICEF study revealed that the majority of women were living in the poorest neighborhoods of Nairobi, areas which benefit very little from the services provided by the city Commission (now city Council), such as Mathare valley, Kibera, Kariobangi, Korogocho, Pumwani, Mukuru and elsewhere, and were heading their households. These single women were unmarried, deserted, divorced or widowed. Many were forced by circumstance to engage in illegal activities, such as the sale of illicit liquor, prostitution and unlicensed hawking. When these women were arrested for these activities, their children were left unsupervised and drifted to the streets.



[2] UNICEF and Government of Kenya, Children and Women in Kenya – a situation analysis, (Nairobi, 1992), p. 76.







NEWS IN MALARIA HEALTH, SOCIAL AND NURSING DATA FROM ASTMH MEETING

J. Sokolova, M. Bosnakova, I. Kmit, J. Mutuku

SEUC Bratislava, Clinic Mary Immaculata Nairobi

ARTEMISININ-BASED COMBINATIONS FOR TREATING UNCOMPLICATED MALARIA IN AFRICAN CHILDREN: THE 4ABC TRIAL

Umberto DΔAlessandro

These results show that DHAPQ, AL and ASAQ have similar and excellent efficacy though DHAPQ may exert a stronger post-treatment prophylactic effect.

EARLY AND LATE EFFECTS OF TWO ARTEMISININ BASED COMBINATION THERAPIES IN THE TREATMENT OF FALCIPARUM MALARIA IN NIGERIAN CHILDREN

Obaro S. Michael

Results from this study also suggest a mobilisation effect on parasites from deeper tissues to the peripheral blood in the early hours after drug administration.

LONGITUDINAL TRIAL OF CHLOROQUINE MONOTHERAPY AND COMBINATION THERAPY FOR UNCOMPLICATED FALCIPARUM MALARIA IN CHILDREN IN BLANTYRE, MALAWI

Miriam K. Laufer

Preliminary results suggest that all treatment arms, including chloroquine monotherapy, were highly efficacious for the treatment of P. falciparum malaria and maintained efficacy throughout the trial period.

EFFICACY OF IPTI WITH SULPHADOXINE/PYRIMETHAMINE COMBINED WITH EITHER AMODIAQUINE OR ARTESUNATE ON MALARIA-RELATED MORBIDITY IN AN AREA OF PAPUA NEW GUINEA WITH SIGNIFICANT LEVEL OF NON-FALCIPARUM INFECTIONS

Nicolas Senn

The results of this study will provide the first evidence for the efficacy of IPTi in settings endemic for both P. falciparum and P. vivax and have important implication for the role of IPTi as an intervention against malarial outside Africa.

EXTENDED PARASITES CLEARANCE TIME AMONG PATIENTS TREATED WITH ARTEMETHER/LUMEFANTRINE OR AMODIAQUINE PLUS ARTESUNATE A TONE SENTINEL SITE IN TANZANIA

Deaus Ishengoma

However ALu was efficacious at both study sites while AQ+AS was less efficacious at Mkuzi where malaria transmission is high. Further studies are needed to monitor possible development of parasite tolerance/resistance to ACTs at these and other sites.

IMPACT OF BASIC CARE PACKAGE DISTRIBUTION ON THE HEALTH OF PEOPLE LIVING WITH HIV/AIDS – ETHIOPIA, 2009

Ethel V. Taylor

Intervention group members were lesslikely than comparison group members to report any illness

(13.3% vs 26.9%, p<0.05) or febrile illness (5.9% vs 8.9%, p<0.05ň in the preceding 48 hours, or to have visited a health facility in the preceding two weeks for any illness (8.5% vs 14.9%, p<0.05), for diarrhea (0.7% vs 1.5%, p<or for respiratory infection (1.0% vs 2.1%, p<The allcause hospitalization rate (2.2 vs 6.9 per 1000 home visits, p<0.05) and all-cause mortality rate (0.7% vs 1.5%, p>0.05) were also lower among intervention than comparison group members. Over the study period, BCP recipients reported fewer illnesses and health facility visits.

PLASMODIUM VIVAX RESURGENCE IN CHILDREN A DECADE AFTER MALARIA ELIMINATION ON ANEITYUMISLAND

Akira Kaneko

Our results suggest recently imported parasites as the probable source of this P. vivax resurgence in Aneityum.

PRELIMINARY RESULTS FROM THE FIRST MALARIA INDICATOR SURVEY (MIS) IN UGANDA, 2009

Denis Rubahika

The percentage of women receiving two or more doses of SP for IPTp doubled from 16% in 2006 to 32% in 2009. Of the 45% of children<5 who had a reported fever in the previous 2 weeks, 36% received an antimalarial on either the same or day after presentation.

ETIOLOGY OF FEVER IN CHILDREN FROM URBAN AND RURAL TANZANIA

Valerie D'Acremont

104 children had a severe disease based on WHO criteria: 38% severe ARI, 36% severe malaria, 10% severe sepsis of unknown aetiology, 8% gastroenteritis with severe dehydration, 8% severe sepsis with another infection and 2% meningitis.

MALARIAL RETINOPATHY IN BANGLADESHI ADULTS

Abdullah Abu Sayeed

Healthy subjects and patients with vivax malaria did not show retinal changes, whereas in patients with falciparum malaria indirect ophthalmoscopy revealed malarial retinopathy in 18/21 (86%) patients with a fatal course, 31/75(41%) with cerebral malaria, 16/64 (25%) noncerebral but severe malaria and 1/31 (3%) with uncomplicated malaria. By direct ophthalmoscopy, retinopathy was missed in one patient with cerebral malaria and graded as less severe in 7. More retinal haemorrhages were found by indirect ophthalmoscopy than direct (mean difference (95%CI) 3.09 (1.50-4.68), p<0.0001). In three patients papilloedema was found by direct ophthalmoscopy but not indirect. For both techniques there was an increase in the severity of retinopathy with increasing severity of disease, from uncomplicated to severe to cerebral malaria (p for trend p<.0001) Indirect ophthalmoscopy is more sensitive to detect retinal pathology in severe malaria, but provides minimal additional prognostic information in the hands of a non-ophthalmologist.

LONG-TERM IMPACT OF REPEATED MDA ON LYMPHATIC FILARIASIS DISEASE IN PAPUA NEW GUINEA

James W. Kazura

In communities where pre-MDA transmission was moderate, hydrocele prevalence decreased from 12% to 3% after 5 years after MDA began (p<0.001) and remained low

A FIELD-TESTED, POST-MDA APPROACH FOR LYMPHATIC FILARIASIS PROGRAMS

Philip J. Budge

Countries nearing elimination of LF cannot afford to lose their investment by allowing re-introduction or recurrence of LF post-MDA. We present here a field-tested approach that can serve as a model for post-MDA activities in developing countries.

IMPACT ASSESSMENT OF REPEATED ANNUAL IVERMECTIN ON OCULAR AND CLINICAL ONCHOCERCIASIS 14 YEARS OF ANNUAL MASS DRUG ADMINISTRATION IN EIGHT SENTINEL VILLAGES, SOUTHEAST NIGERIA 2008

E. Emukah[1]

These observations show that onchocerciasis is no longer a public health problem in the sentinel villages. However, we found 14.7% of 102 children below 10 years had mf in their skin snips, suggestive of continued acquisition of onchocerciasis infection during the 14 year treatment period. Treatment coverage in most of the villages were <80% (eligible population) with occasional omitted rounds, which likely contributed to continued transmission. We conclude that ivermectin treatment needs to continue, and if elimination is contemplated, enhanced programmatic support is needed to increase coverage, and twice per year treatment should be considered.

HOME AND COMMUNITY MANAGEMENT OF MALARIA AND PNEUMONIA IN CHILDREN UNDER FIVE: A CLUSTER RANDOMIZED TRIAL OF AN INTEGRATED APPROACH

Elizeus Rutebemberwa[1]

A total of 208 caretakers who had received treatment from CMDs were assessed, 97.6% (203/208) took all the Coartem given to them and the other five were saving it for later use. Of the 49 children who had taken Amoxicillin, 11/49 (22.4%) did not take all the tablets given and 5/11 stopped because the child got better.

ASSESSING THE IMPACT OF TOPOGRAPHY ON MALARIA EXPOSURE AND MALARIA EPIDEMIC SENSITIVITY IN THE WESTERN KENYA HIGHLANDS

Christine L. Wanjala[1]

This study examined how terrain in the highlands affects the exposure and sensitivity of a site to malaria.

The study was conducted in five sites in western Kenya, two U-shaped valleys (Iguhu, Emutete), two V-shaped valleys (Marani, Fort-Ternan) and one plateau (Shikondi) for ten months among 6-15 years old children. Exposure to malaria was tested using circum-sporozoite protein and merozoite surface protein immunochromatographic antibody test; malaria infection was tested by microscopic examination of thick and thin smears. The mean antibody prevalence was 20.5% in Iguhu, 23.6% in Emutete, 12.7% in Shikondi, 9.6% in Fort-Ternan and 10.6% in Marani. There was a significant difference in the antibodies and malaria infection prevalence among the two valley systems and the plateau ($P<0.05$). There was no significant difference in the antibodies and malaria infection prevalence within the U-shaped valleys and within the V-shaped valleys ($P> 0.05$). There was a 5.7 fold and a 2-fold greater parasites and antibody prevalence respectively, in the U-shaped compared to the V-shaped valleys.

The plateau antibody and parasite prevalence was similar to that of the V-shaped valleys.

DELAYED TREATMENT IN TYPHOID PATIENTS WITH PERFORATED BOWEL IN NIGERIA: WHAT ARE THE CAUSES AND EFFECTS?

Brian S. Barnett[1]

Treatment delays following presentation were due to difficulties paying the required surgical fee (19%) and obtaining blood for transfusion preoperatively (11%) and post-operatively (5%). Having a delay in securing blood pre-operatively was associated with increased mortality (p=0.028). Increased mortality rates were also found for longer durations of that delay (p=0.037) and the presentation-surgery time interval (p=0.025).

LEAD IS UNIFORMLY DETECTED IN A SAMPLE OF CHILDREN ATTENDING OUTPATIENT PEDIATRIC CARE IN ASMARA

Fitsum G. Debretsion

Lead was detected in all blood specimens. Mean BLL was 5.0 + 2.9 mcg/dL, median 4.0 mcg/dL, with a range of 0.5 to 16 mcg/dL. There was a significant and direct relationship between BLL and hemoglobin level, with higher levels of hemoglobin found at higher levels of BLL (95% CI 0.01 to 0.62; p=0.04

POVERTY, DIARRHEA, AND TREATMENT COSTS: UNRAVELING THE RELATIONSHIP

Emily R. Smith[1]

In Bolivia, the under-five mortality rate is 65 per 1,000 children, and diarrhea is responsible for 37% of these deaths. Pediatric diarrhea causes a substantial economic burden to households and healthcare systems.

FETAL HEART RATE DURING ACUTE MALARIA

Stephen Rulisa

To study the time course of the maternal and fetal heart rate (FHR) during recovery from acute malaria, we examined 40 pregnant women with acute malaria and 40 healthy pregnant women. Malaria patients were hospitalized until recovery with a minimum of 3 days. Healthy subjects were measured only once. In conclusion, the circulatory effects of acute malaria during pregnancy are compatible with decreased circulating maternal blood volume. In contrast, the FHR normalises at the same rate as the maternal body temperature.

QUANTIFYING AND MODELLING CROSS-BORDER HUMAN POPULATION MOVEMENTS INTO KENYA IN RELATION TO MALARIA INFECTION MOVEMENTS

Deepa Pindolia

High levels of Plasmodium falciparum malaria transmission are found in certain areas of Kenya, principally areas bordering Uganda around Lake Victoria and bordering Tanzania at the coast. Cross-border movement is hypothesized to play a part in maintaining pockets of high transmission and human movement from such areas to regions of lower or zero transmission are likely to make malaria control and elimination challenging.

THE EFFECT OF CHANGES IN RAINFALL ON THE BURDEN OF MALARIA IN AREAS OF HIGH AND LOW TRANSMISSION

SETTINGS

Ruth K. Nassali[1], Uganda

The effect of rainfall on malaria risk may vary across differing transmission and environmental settings and further by the level of intervention deployment. Changes in rainfall were not associa-

ted with changes in malaria diagnosed in Apac. These initial findings suggest a modest association between increase in rainfall and subsequent malaria upsurges in areas of low but not high transmission intensity.

RISK FACTORS FOR ANAEMIA IN CHILDREN WITH PLASMODIUM FALCIPARUM MALARIA IN THE MOUNT CAMEROON REGION: ROLES OF NUTRITION, WORMWOOD AND IRON DEFIECIENCY

Irene U. Sumbele

The lack of up to date epidemiological data on malaria and anaemia in many parts of Cameroon is a serious handicap towards effective control of these conditions. Iron deficiency had a significant influence on malarial anaemia although a large proportion of anaemia cases could not be explained by iron deficiency indicating that malaria is a significant cause of anaemia in the study population. In 2009, the Government of Kenya launched its second National Malaria Strategy for the period 2009-2017 which includes a new Malaria-free Schools Initiative. Here we present results from a national survey of malaria infection and coverage of malaria control interventions among Kenyan 55,737 children in 552 schools. Malaria risk in the western highlands and along the Kenyan coast was more geographically heterogeneous, whereas there was extremely low malaria risk in central Kenya. Only 1.7% of schools reported ITN use >60%.

MALARIA IN NAIROBI

Sandra A. Mudhune

Consequently, little is known about its epidemiology in low transmission settings such as urban areas. In March 2009 1333 children were examined, 5.5% were identified as having a positive RDT. Among the 74 positive cases 40.5% had travelled outside of Nairobi in the last eight weeks and of these 70% had travelled to an area classified as malaria-risk. However a similar proportion of test negatives had travelled in the last eight weeks 556 (44.5%) and of these 32.6% had travelled to a malaria risk district. In July 926 children were examined. Blood slides were re-examined by expert microscopists for all 17 RDT positives and 10% of RDT negatives. 1.84% of the children had a positive RDT result but this number dropped to 1.08% when the results were confirmed via microscopy and only one child has a history of travel. At this stage the possibility of autochthonous transmission cannot be ruled out and additional results can inform on the true risks.

MALARIA ASSOCIATED SYMPTOMS IN PREGNANT WOMEN: RESULTS OF A COHORT FOLLOW-UP IN BENIN

Bich-Tram Huynh

Little is known on the symptoms of malaria infected pregnant women in stable endemic areas, as it is generally admitted they have acquired an immunity protecting them from acute clinical signs.

NATIONWIDE PREVALENCE OF MALARIA IN CAMBODIA IN 2007: COMPARISON OF MICROSCOPY AND PCR

William O. Rogers[2]

In order to assess the current status of malaria in Cambodia and to compare it with the situation found in 2004, a nationwide malaria survey was conducted in November-December 2007, at the end of the rainy season, the time of peak malaria transmission. Based on microscopy, the overall estimated malaria prevalence and prevalences of *P. falciparum* and *P. vivax* infection in the sampled domains were 2.9% (95% CI, 1.8-4.6%), 1.6% (0.9-2.7%), and 0.9% (0.6-1.6%) respectively. The corresponding prevalences found in 2004 were 4.4% (2.8-6.8%), 2.9% (1.7-5.1%), and 1.3%

(0.8-2.1%); this decline in prevalence, while appreciable, was not statistically significant. In order to determine the extent to which microscopy might underestimate the malaria prevalence, we performed PCR on 7707 samples; in these samples the malaria prevalences estimated by microscopy and PCR were 2.8% and 6.9%, respectively; 289 of 7162 microscopy negative samples (4.0%) were positive by PCR. The high prevalence of infection undetected by microscopy suggests that prevalence surveys based only on microscopy may significantly underestimate malaria prevalence. If these sub-microscopic infections contribute to transmission, then mass screening and treatment based on microscopy alone may miss a significant reservoir of infection.

INSECTICIDE RESISTANCE IN THE ANTHROPOPHILIC MOSQUITOES ANOPHELES ARABIENSIS AND CULEX QUINQUEFASCIATUS IN MACHA, ZAMBIA

Laura C. Norris

Continued monitoring and assessment is necessary in these populations in order to determine levels of resistance and appropriately modify vector control operations.

CONTINUED INTERRUPTION OF LYMPHATIC FILARIASIS TRANSMISSION ONE YEAR AFTER THE CESSATION OF MDA IN A PREVIOUSLY HIGHLY ENDEMIC AREA OF MALI

Siaka Konate

These data are consistent with continued interruption of transmission one year after stopping MDA in a previously highly endemic area of Mali with a low level of residual vector infection. A longer follow up period is necessary to confirm the absence of recrudescence.

SEVENTEEN YEARS OF ANNUAL DISTRIBUTION OF IVERMECTIN HAS NOT INTERRUPTED ONCHOCERCIASIS TRANSMISSION IN NORTH REGION, CAMEROON

Moses N. Katabarwa

This study showed that 17 years was not sufficient to interrupt transmission or stop ocular morbidity from onchocerciasis. Ivermectin treatment should continue in order to avoid the risk of recrudescence.

ONCHOCERCIASIS ELIMINATION IN ABU HAMED FOCUS, NORTHERN SUDAN: A 2007 ENTOMOLOGICAL SURVEY

Control activities in other foci in Sudan resulted in moderate reduction of transmission, as indicated by blackfly vector screening assays. A repeat entomological survey is planned for 2010. Overall assessment of the elimination activities and challenges are discussed

PROTECTION AGAINST ACCELERATED ATHEROSCLEROSIS IN A MOUSE LUPUS MODEL BY ES-62, AN IMMUNOMODULATORY FILARIAL NEMATODE PRODUCT

It is known that T15-type antibodies against PC can protect mice from atherosclerosis and hence as ES-62 is a Pccontaining molecule, generation of such antibodies was investigated as a mechanism of action for atherosclerosis amelioration. However, ES-62 did not induce T15-type antibodies and thus its protective effects in this model may reflect its known anti-inflammatory properties.

OPTIMAL DOSING OF MILTEFOSINE IN LEISHMANIASIS PATIENTS

Thomas P. Dorlo

Pharmacokinetics and -dynamics (PK/PD) of miltefosine in children with visceral leishmaniasis (VL) remain ill-characterized. We recommend the use of an allometric dose formula for miltefosine for leishmaniasis, which results in a similar exposure to miltefosine between adults and

children. More data are urgently needed on both PK and PD of miltefosine in VL, certainly in children, to further improve the treatment of this fatal neglected disease.

SHORT-COURSE MULTI-DRUG TREATMENT FOR VISCERAL LEISHMANIASIS IN INDIA

Most of the available drugs used as monotherapy for visceral leishmaniasis (VL) are toxic, not well tolerated, require long treatments or are expensive. Better treatment modalities are needed. We conducted a randomized, controlled, non-inferiority trial (Ä= -7% between combinations and standard treatment) in Bihar, India, to compare standard treatment (amphotericin B infusion alternate days for 30 days) with three drug combinations: single injection of 5 mg/kg liposomal amphotericin B (L-AmB) and 7-day miltefosine; L-AmB and 10-day paromomycin; miltefosine and paromomycin for 10 days. There were eight relapses, two in each group. The efficacy rates were: amphotericin B 93.0% (93.0% CI 87.50-96.27); L-AmB and miltefosine 97.5% (93.32-99.20); L-AmB and paromomycin 97.5% (93.24-99.19); miltefosine and paromomycin 98.7% (95.06-99.78). Combination therapies were well tolerated and had fewer adverse events. In conclusion, all three combination treatments were highly effective and safe. Due to shorter duration of treatment, combinations can increase compliance as well as reduce emergence of drug resistance.

EVALUATING THE IMPACT OF AN INTERVENTION ON PEDIATRIC MALARIA CASE-MANAGEMENT PRACTICES IN PUBLIC HEALTH FACILITIES IN KENYA

Our findings show: 1) the proportion of health workers who had received any malaria case-management training increased from 46% to75% (P=0.01); 2) the proportion of health workers who received the intervention specific training was 61% 3) the proportion of febrile children with uncomplicated malaria treated with the firstline antimalarial drug, artesunate-lumefantrine (AL), at health facilities where AL was in stock increased from 74% to 84.6% (P=0.007) 4) The proportion of caregivers who knew the correct AL duration increased from 67% to 80% (P=0.009). However, when the analyses were restricted to health workers who received the intervention training versus those not trained, there were no significant differences. In conclusion, although there were significant improvements in case management, these could not be attributed to the intervention.

ANTIPLASMODIA ACTIVITIES OF METHANOLIC EXRACT OF ANOGEISSUS LEIOCARPUS AND ITS PATHOLOGICAL EFFECT ON MALARIA PARASITE INFECTED MICE

Rotimi Fasimoye

EFFECTIVENESS AND TREATMENT ADHERENCE TO ARTEMETHER/LUMEFANTRINE UNIT DOSE AGE SPECIFIC PRE-PACKS VERSUS BLISTER PACKS IN THE TREATMENT OF UNCOMPLICATED MALARIA IN UGANDA

Joaniter I. Nankabirwa[1]

The adherence to unit dose age specific pre-packs was 92% compared with 96% to the AL blister packs plus instruction leaflets.

EFFECT OF ARTESUNATE ON DISPOSITION OF ORALLY ADMINISTERED AMODIAQUINE IN PATIENTS WITH UNCOMPLICATED MALARIA

George O. Ademowo

The emergence of drug resistance in *Plasmodium falciparum* has necessitated that *falciparum* malaria be treated with Artemisinin-based Combination Therapy (ACT). Amodiaquine (AQ) is one of the drugs used in combination with artesunate for malaria treatment. Artesunate significantly

affected the disposition of the parent drug, amodiaquine but not the metabolite, desethylamodiaquine when orally administered in combination in patients with malaria.

NOVEL BORON-CONTAINING SMALL MOLECULES DEMONSTRATE POTENTIAL FOR MALARIA THERAPY: EXCELLENT IN VIVO EFFICACY IN MURINE PLASMODIUM BERGHI MODELS AND FAVORABLE PHARMACOKINETICS

Yvonne R. Freund

AN3661 demonstrated *in vivo* efficacy after oral treatment in a 4-day murine model of *P. berghi* infection, where parasitemia was detected by flow cytometry on Day 4 (ED90< 3 mg/kg). In addition, AN3661 showed 100% cure when dosed twice-daily for 4 days at 100 mg/kg, in a 42-day model, with no parasitemia detected after 42 days. In summary, novel boron-containing small molecules offer promising potential as new orally-active antimalarials.

ANTIMALARIAL ACTIVITY OF INDIVIDUAL ENANTIOMERS OF 8-AMINOQUINOLINES

N. P. Nanayakkara,

ANTI-MALARIAL ACTIVITY OF CEM-101, A FLUOROKETOLIDE ANTIMICROBIAL, IN BOTH BLOOD STAGE AND PRESUMPTIVE CAUSAL PROPHYLACTIC MOUSE MODELS

Susan Fracisco

These results suggest that CEM-101, like azithromycin, demonstrates a delayed death effect; that is, developing liver stage merozoites are effectively nonviable blood stage parasites.

NOVEL INHIBITORS OF PLASMODIUM FALCIPARUM DIHYDROOROTATE DEHYDROGENASE EXHIBIT ANTIMALARIAL ACTIVITY IN MURINE MODELS

Michael L. Booker

An iterative lead optimization process is continuing, and closely related analogs with good potency and improved ADME properties are currently under investigation

CEM-101, A NEW FLUOROKETOLIDE WITH ANTIMALARIAL ACTIVITY

J.C. Craft

This data would support future studies to determine CEM potential for the treatment of blood stage malaria in combination with a fast-acting antimalarial. It may also have additional benefits because of its activity as an antibiotic.

SPATIAL AND TEMPORAL PATTERN OF ANTI-MALARIA ANTIBODY RESPONSES AS EVALUATION OF HUMAN EXPOSURE IN THE WESTERN KENYAN HIGHLANDS

Assessment of exposure to malaria at different altitudes and transmission intensities will inform the implementation and evaluation of malaria control programs. Recently anti malaria antibodies to merozoite surface protein 1 (MSP-1) have been described as the best immunological marker for estimating malaria exposure as a proxy for transmission intensity across various altitudes. In conclusion, this data confirms a highly heterogeneous malaria exposure at this highland site possibly due to clustered vector densities around major breeding sites near valley bottoms. Whether the high level of Ab in infants is as a result of exposure or exclusively due to maternal antibodies is yet to be elucidated.

IMPLEMENTING A CAMPAIGN TO DISTRIBUTE NINE MILLION FREE LLINS TO CHILDREN UNDER FIVE YEARS IN TANZANIA

Tanzania launched a national voucher program in 2004 to provide pregnant women and infants with subsidized insecticide-treated nets (ITNs). Three years later, 24.8% of Tanzanian children <5 years of age were sleeping under an ITN (only 12.9% of the lowest wealth quintile). The campaign started March '09 and ended May '10. Household (n=1,483) surveys found ITN ownership of at least one ITN ranged from 61-82%. Overall, use among children <5 was 48.0% and 62.2% in the first and second zones, respectively. ITN use generally increased across all wealth quintiles, but regional variation was detected. Despite providing free LLINs to all children <5 years of age and substantially increasing household ownership.

SYSTEMATIC SCREENING FOR AND TREATMENT OF ASYMPTOMATIC CARRIERS OF PLASMODIUM FALCIPARUM MALARIA WITH ARTEMETHER-LUMEFANTRINE (AL) IN A COMMUNITY SETTING TO REDUCE DISEASE TRANSMISSION: A CLUSTER RANDOMIZED, SINGLE-CENTER, CONTROLLED, 12-MONTH PROSPECTIVE STUDY IN AFRICA

Treatment of asymptomatic carriers (AC) of *Plasmodium falciparum* with artemisinin combination therapies should reduce the parasite reservoir and impact transmission. The direct benefit in ACs by measuring their hemoglobin level change from baseline to D 28 in treated (intervention) vs. not-treated (control) AC diagnosed at first CSC.

DO INSECTICIDE TREATED NETS PROTECT AGAINST MALARIA INFECTION IF THEY HAVE HOLES?

Results show that prevalence of infection is associated with net condition, with children who slept under treated nets with holes having a higher risk of infection than those who slept under treated nets that were intact. If confirmed, this finding may be an indication of the epidemiological impact of insecticide resistance on the effectiveness of pyrethroid based vector contro.

PLACENTAL MALARIA IN PREGNANT WOMEN USING ITN/LLIN AND IPT AS CONTROL MEASURES IN THREE SELECTED TOWNS OF SOUTHEAST NIGERIA

Florence Nduka

Of the 844 women examined, 225 (26.7%) used ITN/LLIN, 276 (32.7%) used IPT while 343 (40.6%) used other measures. The ITN/LLIN group had 36.9% infection with 83 of 225 infected. The IPT group had 39.1% infection with 108 of 276 infected while those who used other measures had 216 0f 343 (63%) infected.

EFFECT OF INCENTIVES ON INSECTICIDE-TREATED BED NET USE IN SUB-SAHARAN AFRICA: A CLUSTER RANDOMIZED TRIAL IN MADAGASCAR

Paul J. Krezanoski

Providing incentives for behavior change is a promising tool that can complement traditional ITN distribution programs and improve the effectiveness of ITN programs in protecting vulnerable populations in the short-term. Further study of the cost-effectiveness of these incentives and their longer term effects is warranted.

PREVALENCE OF INTESTINAL PARASITES, ANAEMIA AND ANTHROPOMETRIC STATUS AMONG CHILDREN UNDER FIVE YEARS OF AGE IN LAMARAME (SENEGAL)

Roger C. Tine

Anaemia and stunting constitute a public health problem in Lamarame despite periodical mass administration of vitamine A and mebendazole treatment for STH. Protozoan infections such *Giardia* and *E. coli* are frequent in the area. Additional interventions are needed to target these parasitic diseases.

EFFICACY OF ARTEMETHER-LUMEFANTRINE (AL) IN THE TREATMENT OF BLOOD STAGES OF PLASMODIUM VIVAX

RANDOMIZED STUDY COMPARING ARTESUNATE PLUS AMODIAQUINE TO ARTHEMETER PLUS LUMEFANTRINE FOR THE REPEATED TREATMENT OF RECURRENT PLASMODIUM FALCIPARUM UNCOMPLICATED MALARIA OCCURRING IN COHORT FOLLOWED DURING TWO YEARS IN SENEGAL

Jean Louis A. Ndiaye

In the ITT population, ACPR after PCR correction at D28 for the 1st episode was 98.4% vs 96.2% respectively in the ASAQ and AL groups. A 100% ACPR rate was also obtained at D28 in the 60 and 4 patients who experienced respectively a 2nd and a 3rd episode. Treatment-related AEs were reported in 11.7% of the patients without significant differences between the 2 groups.

COGNITIVE FUNCTIONING AFTER CEREBRAL MALARIA IN UGANDAN CHILDREN BELOW FIVE YEARS: A PROSPECTIVE

STUDY

Paul Bangirana

Earlier studies in African children aged 5 to 12 years have shown cognitive deficits mainly in attention and memory after an episode of cerebral malaria (CM). We present preliminary results of cognitive function after CM in children less than 5 years of age. Sixty nine Ugandan children aged 18 months to 4.9 years admitted with CM at Mulago Hospital were assessed for fine and gross motor skills, receptive and expressive language skills. Final analysis to assess risk of cognitive impairment in children <5 years of age with CM will be performed when study cohort enrollment is complete.

NORTH AMERICAN PARAGONIMIASIS FOLLOWING INGESTION OF RAW CRAYFISH IN THE MISSOURI OZARKS

Michael A.

Physicians should consider the diagnosis of paragonimiasis in patients with pulmonary symptoms, fever and eosinophilia.

THE EFFECT OF GENITAL SCHISTOSOMA HAEMATOBIUM INFECTION ON FEMALE FERTILITY

Eyrun F. Kjetland

Previous reports indicate that anti-schistosomal treatment may reverse infertility, however this study could not confirm this. Larger studies are needed to determine the mechanism of infertility and if these women are more prone to abortion.

IS SUDANESE VISCERAL LEISHMANIASIS DIFEFERENT FROM VL DIFERENT FROM ON THE INDIAN SUBCONTINENT ?

Ed E. Zijlstra

Serological tests have different performance; while the rK39 striptest in India has sensitivity of nearly 100%, in Sudan this is less than 75%. Response to treatment is also different; on average the

response to stibogluconate is good, while in India important resistance exists probably the result of inadequate dosing and compliance. In contrast, in a recent trial, the efficacy of patomomycin was considerably less in Sudan compared with what was found in India. Parasities circulating in Sudan are genetically more diverse (heterogeneic).

ROSIGLITAZONE ADJUNCTIVE THERAPY IMPROVES THE OUTCOME OF EXPERIMENTAL CEREBRAL MALARIA IN PLASMODIUM BERGHEI-INFECTES MICE TREATED WITH ARTESUNATE

Lena Serghides

In summary, we have shown that rosiglitazone, a compound that modules the host response to infection, improved the outcome of experimental cerebral malaria when administered in combination with artesunate.

DISPARITIES IN ACCESS SANITATION IN BOLIVIA

Alexandra D. Huttinger

Bolivia is the only country in Latin America that is falling short of Millennium Development Goal ≠7 target for sanitation.

CRYPTOSPORIDIUM CONTAMINATION OD SURFACE AND WATWR SUPPLIES IN HAITI

Philippe M. Brasseur

All surface water 4/4 colleted in Port-au-Prince or in peripheral areas was highly contaminated. In Les Cayes 8/15 (53%) samples contained *Cryptospoidium oocyst* and the number detected varied from 5 to 100 (mean 29)/100 L of water filtered.

CRYPTOSPORIDIUM CONTAMINATION OF SURFACE AND WATER SUPPLIES IN HAITI

Philippe M. Brasseur

All surface water 4/4 collected in Port-au-Prince or in peripheral areas was highly contaminated. In Les Cayes 8/15 (53%) samples contained *Cryptosporidium oocysts* and the number detected varied from 5 to 100 (mean 29) / 100 L of water filtered. In conclusion, a commitment to environmental improvement in Port-au-Prince and in Les Cayes is required to improve the quality of drinking water and to limit the risk of human transmission of cryptosporidiosis.

POST-IMPLEMENTATION ASSESSMENT OF CERAMIC WATER FILTERS DISTRIBUTED TO TSUNAMI-AFFECTED HOUSEHOLDS IN SRI LANKA

Lisa M. Casanova

Source water quality in many survey households was fairly good; ~50% of filter households had <1 E. coli/100 mL in their water, as did ~70% of non-filter households. Analysis of E. coli levels in untreated and filtered water indicates that the microbial quality of water is improved by filters.

PRINCIPAL VECTORS OF MALARIA AND FILARIASIS IN PAPUA NEW GUINEA (ANOPHELES PUNCTULATUS SIBLING SPECIES) ARE SUSCEPTIBLE TO STANDARD INSECTICIDES USED IN LONG-LASTING INSECTICIDE-TREATED NETS

John B. Keven

NO EVIDENCE THAT ARTEMISININ-RESISTANT MALARIA HAS SPREAD TO SOUTH ASIA

Peter Starzengruber

Not a single case fulfilled our criteria of artemisinin resistance. PCTs were considerably shorter and in vitro results indicate significantly higher susceptibility to artemisinins as compared to SE-Asia. There was also no indication of compromised intrinsic drug sensitivity to artemisinins and treatment response was not dosedependent.

MORTALITY TRENDS OBSERVED IN POPULATION-BASED SURVEILLANCE OF AN URBAN INFORMAL SETTLEMENT, KIBERA, KENYA, 2007-2009

Beatrice Olack

Person-years of observation (pyo) were based on weekly counts of participants residing within study area. We reported 566 deaths; overall mortality rate was 7.0 (95% CI 6.9-7.0) per 1,000 pyo. Mortality rate for children ≤5 years old was 15.2 (95% CI 15.1-15.2) per 1,000 pyo, 3-fold higher than that for persons >5 years old (5.1 per 1,000 pyo, 95% CI 5.0-5.1).Mortality rate for neonates was 95.3 (95% CI 93.7-96.9) per1000 pyo.

HEALTH EFFECTS AND COPING STRATEGIES TO FLOODS IN KUMI DISTRICT, EASTERN UGANDA

Peter Kirabira

The leading causes of morbidity were malaria (OPD:45.44%; IPD:53.13%), respiratory infections (OPD:14.14%; IPD:9.42%) and injuries (OPD:3.40%; IPD:3.71%), while malaria (27.36%), respiratory infections (9.92%) and injuries (4.62%) were the leading causes of mortality. Diarrheal diseases (4.42%), injuries (3.09%) and respiratory infections (1.57%) had highest case fatality rates. Under-fives were most affected (OR=1.06, 95%CI 1.01-1.11), females were more likely to be admitted during the floods than before or after (OR=1.05, 95%CI 1.00-1.10).

THE EFFECTS OF MATERNAL HELMINTH INFECTION AND CO-INFECTION WITH MALARIA ON BIRTHWEIGHT AND SUBSEQUENT GROWTH IN OFFSPRING IN A POPULATION ON THE COAST OF KENYA

There were no significant differences in height z-scores on univariate analysis between the four infection groups described above, however, in most age groups, the “no infection” group tended to have a significantly worse mean weight z-score than the other groups. This data analysis does not show a significant effect of maternal infection on infant growth, however, the relatively small percentage of mothers without infection may make it insufficiently powered to detect a true difference.

PENTOXYFILLINE USE TO MODULATE TUMOR NECROSIS FACTOR IN CHILDREN WITH DENGUE HAEMORRHAGIC FEVER

Doris M. Salgado

A statistically significant decrease of TNF levels in dengue patients treated with pentoxyfilline was found (p=0.02), this result was more significant in patients classified clinically as having dengue III (p = 0.003). In conclusion, taking into account the role of TNFá in the pathophysiology of dengue, pentoxyfilline is suggested as a cost-effective therapeutic measure during the acute phase of severe dengue leading to reduction of complications and death.

DIARRHEA MORTALITY IN CHILDREN AGED 5 TO 14 YEARS IN INDIA

In conclusion, there are no existing estimates for the burden of diarrhea mortality in older Indian children, however, our estimate of 45,000 annual deaths is significantly larger than the Global

Burden of Disease estimate of approximately 1,000 deaths in children aged 5 to 14 years in all of South Asia.

HEALTH PROBLEMS AMONG JAPANESE EMBASSY PERSONNEL IN HANOI, VIETNAM

Yasutaka Mizuno

A total of 696 patients visited the medical division for the purpose of medical consultation, laboratory examination, and vaccinations and because of health problems. Of these, 421 (60.5%) were Japanese. The mean age was 33.95 ± 12.11 years. The remaining 275 (39.5%) patients were Vietnamese. The mean age was 39.56 ± 7.98 years. The most frequent purpose of visit was due to respiratory problems (n=188), followed by vaccinations (n=111), and due to gastro-intestinal (G-I) problems (n=96). G-I and eye problems were more frequently seen in Japanese, whereas genital, orthopedic, and skin problems were more frequently seen in Vietnamese.

PRICE MARK-UPS AND PRICING DETERMINANTS OF ARTEMISININ-COMBINATION THERAPY (ACT) IN THE PRIVATE COMMERCIAL SECTOR DISTRIBUTION CHAIN FOR ANTIMALARIAL DRUGS IN CAMBODIA

Edith Patouillard

Median percentage mark-ups on ACT ranged at retail level between 33.5% in village shops and 50.0% in drug shops, and at wholesale level between 39.9% at the level supplying retailers and 39% at that supplying higher levels of the distribution chain. Findings will also be presented on the influence on ACT pricing of structural aspects of the distribution chain and relationships between providers.

EPIDEMIOLOGY OF MALARIA DIAGNOSTICS WITH THE INTRODUCTION OF RAPID DIAGNOSTIC TESTS IN AFRICAN REFUGEE CAMPS, 2007-2008

David A. Townes

In Africa approximately 1.1 million refugees are under the protection of the United Nations High Commissioner for Refugees (UNHCR), with the majority living in malaria-endemic areas. Historically, malaria has been diagnosed clinically or by microscopy. Introduced in African refugee camps in 2008, malaria rapid diagnostic tests (RDTs) offer a portable, rapid, easy to use and potentially cost effective addition to malaria diagnostics.

Inconsistent availability of both RDTs and microscopy supplies. These results indicate a willingness to use RDTs to supplement existing diagnostics but highlight the need for specific guidelines and training for their integration in these settings to meet 2010 WHO Guidelines for Diagnosis and Treatment of Malaria.

QUALITY OF ARTEMISININ-BASED COMBINATION THERAPY PRESCRIPTION AND DISPENSING IN BAMAKO, MALI, WEST AFRICA

Mahamadou Diakite

The majority of prescribers (71.15%) and dispensers (84.72%) were favorable to the NMCP's recommendations of malaria treatment in Mali.

TRENDS IN MALARIA MORBIDITY AMONG HEALTH CARESEEKING CHILDREN UNDER AGE FIVE IN MOPTI AND SÉVARÉ, MALI BETWEEN 1998 AND 2006

Seydou Doumbia

The monthly presumptive malaria diagnostic rate for children under five decreased by 66%.

Our findings are useful to encourage dialogue around the urban malaria situation in Mali, particu-

larly in the context of achieving the target of reducing malaria morbidity in children younger than five by 50% by 2011 as compared to year 2000 levels.

ANEMIA AND MALARIA IN THE DEMOCRATIC REPUBLIC OF CONGO

In a logistic regression model, malaria parasitemia (OR 1.2; 95% C.I. 1.03 - 1.38), HIV infection (OR 2.7; 95% C.I. 1.69 - 4.31), pregnancy (OR 2.3; 95% C.I. 1.91 - 2.66), rural residence (OR 1.4; 95% C.I. 1.13 - 1.62), and low BMI were independently associated with anemia (all $p<0.02$). Among Carla C. Hand multi- and mono-species infection, only *P. falciparum* monoinfection was independently associated with anemia (OR 1.2; 95% C.I. 1.05 - 1.42; $p < 0.01$).

IS THE RISK OF PLASMODIUM FALCIPARUM MALARIA INCREASING IN VERY YOUNG CHILDREN WHO ARE VFRS?
ARE THEIR PARENTS CONSCIENTIOUS OF THIS RISK?

It is known that immigrant people returning home to visit friends and relatives (VFRs) are the highest risk traveling population for contracting malaria because they lost their preexisting acquired immunity against P. falciparum and they also assume that they are “immune” for the infection leading to a lower compliance of the anti-malarial prophylaxis.

ACTIVE SURVEILLANCE OF MALARIA IN MILITARY AREAS OF OPERATION (AOS) ALONG NORTHERN THAI-MYANMAR AND THAI-NORTHERN CAMBODIA BORDERS DURING 2004-2009

Kiatisak Somsr

From 2004 to 2009, malaria infections in army troops deployed to AO along northern Thai-Myanmar border were 13.2%, 5.1%, 9.6%, 5.2%, 4.9% and 12.2%, respectively. Whereas in AO along Thai-northern Cambodia border, 8.2% 4.0% 7.4% 8.6% 4.2% and 21.3% of deployed troops were infected with malaria during the same period. Malaria cases occurred in two peaks every year from October to February and May to July. An interesting point was that the incidence of *P. vivax* increased each year and implied a shift to primary malaria infection. Active surveillance and additional data must be collected and studied to provide understanding and implementation of efficiency protective programs and thus reduction of DNBI.

CONSEQUENCES OF PREGNANCY-ASSOCIATED MALARIA ON FETAL GROWTH IN KOROGWE, TANZANIA

Christentze Schmiegelow

Using ultrasound investigation, the gestational age is estimated before 24 weeks of gestation. Fetal growth is assessed on at least three consecutive ultrasound investigations, enabling us to diagnose IUGR. In parallel, screening for malaria, PIH and PE is performed during pregnancy and at delivery. PAM is diagnosed using Rapid Diagnostic Tests and placental histology.

ASYMPTOMATIC PLASMODIUM FALCIPARUM INFECTIONS IN NAVRONGO, NORTHERN GHANA: A NEW ANALYSIS METHOD SUGGESTS DIFFERENCES IN CLEARANCE OF INFECTIONS COMPARED TO MALARIA THERAPY DATA

Michael T. Bretscher

The results suggest pronounced differences in the distribution of infection durations compared to malariatherapy data. Part of the infections in the natural population appear to be of relatively short duration, with some infections persisting for a long time.

Ongoing research investigates the robustness of these results with respect to more explicit modeling of additional features of within-host dynamics, such as the decrease of parasite

densities over the time course of an individual infection, which lowers the probability of detection.

LATE BITING OF AEDES ALBOPICTUS IN CHIANG MAI PROVINCE, NORTHERN THAILAND, CHANCE FOR PREVENTION AND MOSQUITO CONTROL

Wannapa Suwonkerd

In dry season (January to April) Ae. albopictus showed long day biting from 06.00 hr to 23 hr with sharp peak from 15.00-18.00. However after sunset, 18.00-23.00 hr. this mosquito showed the same number of mosquito collected between 12.00-15.00 hr. The raining season study is on going and it will be further discuss later.

DETECTION OF BLACTX-M-15 EXTENDED-SPECTRUMLACTAMASE GENES IN E. COLI FROM HOSPITAL PATIENTS IN NIGERIA

To our knowledge, this is the first report of E. coli carrying blaCTX-M-15, blaTEM, and blaOXA genes in Nigeria. Further studies are ongoing on blaCTX-M enzymes situation in zoonotic isolates as it relates to man.

IN VIVO EFFICACY OF CIPROFLOXACIN, CEFTRIAXONE AND DOXYCYCLINE ALONE AND IN THEIR COMBINATION AGAINST VIBRIO VULNIFICUS INFECTION

Ciprofloxacin was the most effective drugs for monotherapy with high survival rate of 25 % at 48h. In combination therapy, a single dose doxycycline (i.p.) plus ceftriaxone was sufficient to reduce the mortality by 50 % in high dose *Vibrio* inoculated iron loaded mice in contrast to survival rate of 40 % in doxycycline oral plus ciprofloxacin treatment groups at least in our mouse model infection.

ANTIBIOTIC SUSCEPTIBILITY OF ENTEROBACTERIACEAE ISOLATED FROM COSTEŃO ARTISAN CHEESE SOLD IN MONTERIA DEPARTMENT OF CORDOBA, 2009

Linda M. Chams

E. coli were isolated in the 75 samples (100%) tested, 7 of the 75 samples (9,3%) showed *Salmonella spp.,* and in 68 of the 75 samples (90,7%) analyzed was isolated Citrobacter spp. All strains isolated were resistant to amoxycillin for 100%, tetracycline 87.5%, Gentamicin and Chloramphenicol 70% c/u and 62.5% to amikacin.

In conclusion, given that the costeńo cheese is a food prepared from raw milk, a fact which get worse by deficiencies in sanitation and hygiene of outlets that sell this high regional consumption product, the high resistance percentage of Enterobacteriaceae isolated in these product to antibiotics is a concern, and turn on the alarms on their indiscriminate use, a fact that may cause the emergence of multiresistant strains to transfer this resistance to commensal and to pathogenic bacteria in food and bacteria belonging to the gastrointestinal flora of the consumer, making a serious public health problem.

EPIDEMIC CHOLERA IN KAKUMA REFUGEE CAMP, KENYA: THE IMPORTANCE OF SANITATION AND SOAP

Abdirahman Mahamud

In the multivariate model including cases and unmatched controls, using a latrine consistently was protective against cholera (AOR=0.13; $p<0.01$), whereas children not using a latrine (AOR=2.8; $p=0.02$) and living in Area A (AOR=10.23; $p<0.0001$) were risk factors. In conclusion, provision of soap, along with education on hand hygiene may be considered, as an affordable intervention to prevent cholera.

BACTERIOLOGICAL AND PHYSICAL QUALITY OF LOCALLY PACKAGED DRINKING WATER IN KAMPALA CITY, UGANDA

Ali Halage

Total coliform significantly above the acceptable level of zero cfu was detected in 15% (9/60) of the bottled samples (p=0.004); and 70% (21/30) of sachet water (p=0.000). There was significantly higher prevalence of total coliform in sachet water compared to the bottled water (OR=13.2, 95% CI: 4.12-43.58). Also, more than half of the respondents, 56 % (237/423) preferred bottled to sachet water for drinking, because they perceived the latter as unsafe. In conclusion, about 15% of bottled water and 70% of sachet water samples in the retail outlets in Kampala city are likely to be contaminated with total coliform. Sachet water had significantly higher prevalence of total coliform compared to bottled water.

GEOHELMINTHS AND HIV AMONG PREGNANT WOMEN FROM COASTAL KENYA: THE ASSOCIATION WITH MATERNAL HEALTH

Ernest Midega

The rural sample was characterized by a higher and more varied worm burden (risk of being infected rural R.R=3.3 vs. urban R.R=0.109). The association between HIV status and worm infection was not in the expected direction with P =2.1. This will be discussed. Both HIV and worm infection was related to the Hb levels of the mothers, as well as their nutritional status. The risk of low Hb or weight being associated with co-infection was greater single infections with R.R of =1.2.

AGRICULTURAL PRACTICES ARE RELATED TO HUMAN HELMINTH INFECTION IN SUB-SAHARAN AFRICA

Naomi Hauser

Infection with any parasite was found to be associated with tending cattle (p=0.093) and pigs (p=0.089); *Trichuris* sp. was associated with doing fieldwork less than daily (p=0.0068), tending goats (p=0.055), and being an agricultural worker (p=0.015) or student (p=0.086); *Oesophagostomum* sp. was associated with tending pigs (p=0.078); and *Trichostrongylus* sp. was associated with tending pigs ever (p=0.028), tending pigs (p=0.0035) and cattle (p=0.096) daily, and being an agricultural worker (p=0.091). The village of Kamakune I showed the highest prevalence of infection overall (68%) and Kamakune II showed the lowest (14%). Among the thirty people from Nyaruzigati, significant positive associations were found between the number of pigs at a household and *Ascaris* sp. (p=0.0028) and *Trichuris* sp. (p=0.033). Results of this study suggest that, even in small numbers, pigs are highly associated with human infection with multiple GI helminths. Other farming practices are similarly associated with helminth infections to lesser degrees.

TREATMENT DEFAULT IS LOW AMONG PATIENTS INITIATING HAART AT THE KORLE-BU TEACHING HOSPITAL IN ACCRA, GHANA

April K. Wilhelm

A majority of patients initiating HAART in an urban Ghanaian clinic remained in care through one-year of follow-up. Patients

PNEUMOCYSTIS JIROVECII IN SUB-SAHARAN AFRICA: LOW PREVALENCE OF LUNG COLONIZATION IN UGANDAN AIDS PATIENTS WITH NON-PNEUMOCYSTIS PNEUMONIA

Steve M. Taylor

In contrast to reports from the developed world, the prevalence of *P. jirovecii* colonization is low

in hospitalized HIV-positive patients in Kampala. Its strong association with death during followup merits further inquiry.

PUNICALIN AND PUNICALAGIN FAILS CEREBRAL MALARIA?
Deepak X. Bhattacharya
In *AJTMH* 2003, 2004 & Multi Lateral Initiative on Malaria Yaounde-05, introduced Indo medicinal fruit called *Dalimba* (P granatum) having therapeutic & prophylactic efficacy against drug resistant malaria.

ACTIVITY OF 8-AMINOQUINOLINE (8AQ) ANTIMALARIAL DRUG CANDIDATES AGAINST BLOOD STAGE PLASMODIUM FALCIPARUM
Yarrow Rothstein

DEVELOPMENT OF A NOVEL CHEMICAL SERIES WITH ACTIVITY AGAINST BOTH BLOOD- AND LIVER-STAGES OF PLASMODIUM FALCIPARUM
Clare E. Gutteridge

NOVEL AMINOINDOLE INHIBITORS OF PLASMODIUM FALCIPARUM: IN VIVO EFFICACY AND PRELIMINARY SAFETY ASSESSMENT
Robert H. Barker

NOVEL ACRIDONES AS BROAD-SPECTRUM ANTIMALARIALS
Jane X. Kelly

ANTIPLASMODIAL ACTIVITY OF SOME MEDICINAL PLANTS USED IN SUDANESE FOLK-MEDICINE
El-Hadi M. Ahmed
Ten plants indigenous to Sudan and of common use in Sudanese folkmedicine, were examined *in vitro* for antimalarial activity against schizonts maturation of *Plasmodium falciparum,* the major human malaria parasite. All plant samples displayed various antiplasmodial activity. Three plant extracts caused 100% inhibition of the parasite growth at concentrations of plant material 500 µg/ml. The two most active extracts that produced 100% inhibition of the parasite growth at concentration of plant material 50 µg/ml were obtained from the seeds of *Nigella sativa* and the whole plant of *Aristolochia bracteolata*. The ten plants were phytochemically screened for their active constituents. The two most active plants showed the presence of sterols, alkaloids and tannins.

ANTI-PLASMODIAL AND IMMUNOMODULATORY ACTIVITY OF MEDICINAL PLANTS USED IN BURKINA FASO AGAINST MALARIA
The reliability of indigenous herbal drugs may be helpful. In Burkina Faso, the decoctions of *Canthium henriquesianum* Schum, *Gardenia sokotensis* Hutch. and *Vernonia colorata* Willd. are used to treat malaria. The decoction of *C. henriquesianum* contains hydrolysable tannins, flavonoids, saponins and no alkaloids. Extracts of *C. henriquesianum* also induced a dose-dependent inhibition of the production of IL-1Č by human monocytes, thus confirming its traditional use as antipyretic. Attempts to identify the active principle for antiplasmodial and anti-inflammatory activities are ongoing.

MALARIA INFECTION AND MEASLES VACCINATION EFFICACY - CAUSE FOR CONCERN?

Jeffrey M. Collins

These results suggest that malaria has a minimal impact on the quality of MV immunity following the first vaccination. Future studies will evaluate factors, such as second MV immunization and prolonged exposure to malaria, which may influence the quality and duration of immunologic memory to the MV vaccine.

IMPACT OF ARTEMETHER-LUMEFANTRINE ON MALARIA TRANSMISSION AND UNDER FIVE MORTALITY IN TWO RURAL DISTRICTS OF TANZANIA

Abdunoor M. Kabanywanyi

A total of 5903 persons were assessed in 2005, 6324 in 2006, 4557 in 2008 and 7454 in 2009. Asymptomatic parasite prevalence in the whole population was 11.4% in 2005, 13.6% in 2006, 11.0% in 2008 and 4.6% in 2009. Gametocyte carriage rates were 0.3% in 2005, 0.2% in 2006, 1.4% in 2008 and 0.4% in 2009. Prevalence of anaemia in children under five was 17.8% in 2005, 9.7% in 2006, 10.1% in 2008 and 10.9% in 2009. Population coverage with insecticide-treated bednets was 35%, 36%, 44% and 47% respectively. Under five mortality rate per 1000 person-years was 27.0 in 2005, 23.1 in 2006, 21.3 in 2007 and 18 in 2008. After 3 years of AL implementation, there was a considerable decline in parasite prevalence but no change in anaemia prevalence. On average gametocyte carriage rate has remained < 1% throughout the period. Mortality in children <5 years decreased, but trend was consistent with pre- and post-AL introduction.

COVERAGE OF INSECTICIDE TREATED NETS AND INTERMITTENT PREVENTIVE THERAPY FOR THE CONTROL OF MALARIA IN PREGNANCY IN SUB-SAHARAN AFRICA: MAPPING PROGRESS

Anna M. van Eijk

Over the past 10 years, policies for intermittent preventive treatment (IPTp) with sulfadoxine-pyrimethamine (SP) and use of insecticide treated nets (ITNs) for the control of malaria in pregnant women have been almost universally adopted in sub-Saharan African countries. Both ITNs and IPTp are delivered through antenatal clinics alongside other antenatal care packages. TN policies for pregnant women could be identified for 45 of 47 malarious countries in sub-Saharan Africa; the median year of adoption was 2002 (range 1998-2007). Data from 32 surveys between 2004 and 2009 showed that the median reported ITN use among women aged 15-49 years was 13.8% (interquartile range [IQR] 4.9%-26.8%, n=286). Only 7 regions had ITN coverage of >=60%; all in countries that adopted ITNs for pregnant women >5 years ago (P=0.04) and in areas with a mean *Plasmodium falciparum* (Pf) prevalence among children 2-9 yrs of age between 10-49% (2007). Thirty nine countries have adopted IPTp (median year of adoption 2004, range 1993-2007). The median IPTp coverage (any source, any number of doses) was 17.0% (IQR 4.6-74.3%, n= 282 regions) in 36 countries that had an IPTp policy in place for ≥1 year at the time of survey; 49 regions from 9 countries had a coverage of ≥60%, 42 of these (85.7%) were in areas with a mean Pf prevalence among children 2-9 yrs (2007) of 10% or more, and 25 of them were in countries which had adopted IPTp >5 years ago (P<0.001). The median use of any drug for malaria prevention was 55.6 % (IQR 37.0-73.9%, 281 admin1 from 31 countries), and the median coverage of ANC (≥1 visit) was 88.1% (IQR 66.5-95.3%, n=342 admin1, 39 countries). In conclusion, ITN coverage is still below the Abuja target for many countries in sub-Saharan Africa. Considerable progress has been made for IPTp. The high utilisation of ANC and of use of drugs for malaria prevention in pregnancy indicates there is significant potential to improve malaria prevention among pregnant women.

IMPACT OF INTERMITTENT PREVENTIVE TREATMENT IN INFANTS WITH SULFADOXINE-PYRIMETHAMINE ON MORTALITY IN THE DISTRICT OF KOLOKANI, MALI

Alassane Dicko

The differences in disease specific mortalities between the two zones were not statistically significant. In conclusion, this study shows significant reduction in overall mortality in IPTi intervention zone compared to the control zone during the IPTi implementation period and supports the introduction of IPTi-SP alongside other malaria control interventions.

THE MALAWI NATIONAL MALARIA CONTROL PROGRAM'S "YEAR OF ACTION-2010": GAUGING PROGRESS TOWARD MALARIA CONTROL

Doreen Ali

Select indicators document that net usage in children under 5 increased to 61% from 23% in 2006 and coverage with 2 doses of IPTp reached 72% compared to 46% of women in 2006. Malawi's 2010 MIS is underway. Fieldwork and data collection was completed in April 2010. Children under 5 from 3500 households were interviewed. Preliminary results will be available in June 2010.

REDUCTION IN ANEMIA IN CHILDREN UNDER TEN YEARS OF AGE AFTER DISTRIBUTION OF LONG-LASTING INSECTICIDAL NETS (LLIN) FOR CONTROL OF MALARIA AND LYMPHATIC FILARIASIS IN FOUR LOCAL GOVERNMENT AREAS (LGAS) IN SOUTHEAST NIGERIA

Patricia M. Graves

MALARIA SURVEILLANCE IN HAITI, POST-EARTHQUAKE, 2010

David A. Townes

On January 12, 2010, a 7.0 magnitude earthquake struck Haiti. The earthquake's epicenter was 10 miles west of the Haiti capital city of Portau-Prince. According to the Haitian government, approximately 200,000 persons were killed, and over 2 million were displaced. *Plasmodium falciparum* malaria is endemic in Haiti where the principal vector is the *Anopheles albimanus* mosquito, which frequently bites outdoors. Thus, displaced persons living outdoors or in temporary shelters in Haiti are at substantial risk for malaria. We conducted a survey of 1,629 consecutive suspected malaria patients presenting to medical clinics managed by Save the Children in the earthquake affected areas of Leogane and Jacmel from March 4 to April 9, 2010. Suspected malaria accounted for 3.0% of all consultations. Females accounted for 59% of suspected malaria consultations. A malaria rapid diagnostic test (RDT) was performed on 96% (1,564/1,629) of these patients with an overall positivity rate of 20.3% (317/1,564). Among 341 children less than five years of age, 7.6% were RDT positive, 87.7% were RDT negative, and 4.7% had no RDT result recorded. Among 1288 individuals five year of age and older, 22.6% were RDT positive, 73.6% were RDT negative, and 3.8% had no RDT result recorded. Among 463 women aged 15-49 years, 21.0% were RDT positive, 75.6% were RDT negative, and 3.5% had no RDT result recorded. This included 40 pregnant women among whom 27.5% were RDT positive, 65.0% were RDT negative, and 7.5% had no RDT result recorded. Of the 317 patients with a positive RDT, 87.7% received chloroquine, 2.5% received quinine, and 9.8% had no anti-malarial documented. Malaria is an important public health problem in Haiti post-earthquake with the potential for an increase in cases given the large number of displaced individuals and the onset of the rainy season. Continued malaria surveillance is essential to monitor prevalence, identify areas of potential increased transmission, detect epidemics should they occur, and help direct and monitor interventions and response.

www.astmh.org

RECURRENT AND SUB-PATENT INFECTIONS ARE A COMMON OCCURRENCE IN PLASMODIUM VIVAX PATIENTS TREATED WITH CHLOROQUINE AND PRIMAQUINE: A ONE-YEAR COHORT STUDY IN PERU

Peter Van den Eede1

Worldwide, *Plasmodium vivax* has re-emerged and developed in a major problem in areas where it had been eradicated, and has become increasingly prevalent in areas where it is sympatric with *P. falciparum*. It has the ability of producing relapses originating from dormant liver forms. Fifty one P. vivax patients living in communities around Iquitos, in the Peruvian Amazon region, where treated with chloroquine and primaquine and then followed up monthly for 1 year. Passive detection of malaria cases was also carried out throughout the study period. At each visit a blood sample was systematically collected and screened with species-specific PCR. Positive samples were then genotyped using 16 polymorphic microsatellites. Eighty four recurrent infections were identified, 61% within 6 months after treatment (median time 203 days), 22 of them positive also by microscopy. The majority (71%) of recurrences was asymptomatic and in 13 patients the infection persisted for several months at sub-patent level. The genotype of most (75%) recurrent infections was different from that at day 0; 41% of recurrent infections carried different alleles as compared to any previous episode. Only 8 infections were polyclonal. The average expected heterozygosity was 0.55. There was strong linkage disequilibrium ($ISA = 0.29$, $p < 1.10\text{-}4$) which remained also when analyzing only the unique haplotypes, suggesting common inbreeding. In Peru, similarly to Brazil and Vietnam, *P. vivax* recurrent infections, despite the low transmission intensity, were common and displayed a high turnover of parasite genotypes. Most infections were asymptomatic, persisting for several months and detectable only by PCR. *Plasmodium vivax* patients, even when appropriately treated, may still represent an important parasite reservoir from which transmission can be maintained. Therefore, any elimination effort should consider approaches able to identify and treat this hidden reservoir.

ROLE OF RAPID DIAGNOSTIC TESTING (RDT) IN THE CONTEXT OF HOME MANAGEMENT OF CHILDHOOD FEVER (HMCF) WITH DISPERSIBLE ARTEMETHER-LUMEFANTRINE: AN OPEN LABEL RANDOMIZED CONTROLLED TRIAL IN A RURAL AND SEASONAL MALARIA TRANSMISSION AREA OF BURKINA FASO

Tiono B. Alfred

Children aged 6-59 months (mo) with a history of fever (last 24 hours) or axillary T°> 37.5°C received presumptive treatment with antimalarial drug (dispersible artemether-lumefantrine, DAL) in the control arm.

The study has shown that the use of RDT by community Health Workers is feasible in our context. However a more specific test is needed for use at community level to be recommended.

MANAGEMENT OF FEBRILE YOUNG CHILDREN IN MALARIA MIX-ENDEMIC AREAS (PLASMODIUM FALCIPARUM AND P. VIVAX). QUICK ATTENDANCE, RAPID TESTING AND EFFECTIVE TREATMENT: A SAFE ATTITUDE IN PAPUA NEW GUINEA

Nicolas Senn

From 2006 to 2009, 1605 infants 3 months old were enrolled and followed-up for 2 years. A total of 7004 febrile episodes were recorded. The median symptoms' duration was 2 days. 3807 (54%) had a negative RDT. Among them, 146 (3.8%) re-attended the clinic within 7 days for fever, 1 died (negative RDT & BS) and 24 (0.6%) presented a serious adverse event: 13 had a negative RDT, 3 had a positive RDT or quick read (but negative BS) and 8 had no RDT's results (2 had negative BS, 1 positive BS, 4 without BS were treated without antimalarial drugs for alternative diagnostics,

1 without BS received Coartem®).There were 1677 positive RDT's. All treated with Coartem®, 39 (2.3%) re-attended within 7 days for fever, none died and 5 (0.3%) presented a serious adverse event (2 possible severe malaria, 1 possible meningitis, 1 severe pneumonia and 1 gastroenteritis). This study provides good evidence that the approach "quick attendance, rapid testing and effective treatment" is safe and feasible in infants in countries with limited resources and a high level of Pv infections.

A LARGE PROPORTION OF ASYMPTOMATIC MALARIA INFECTIONS WITH LOW PARASITE DENSITIES IN TEMOTU PROVINCE, SOLOMON ISLANDS: CHALLENGES FOR MALARIA DIAGNOSTICS IN AN ELIMINATION SETTING

The results suggest a combination of methods, or new diagnostics, may be required to detect infections in asymptomatic parasite reservoirs, the prevalence of which is high even in low transmission settings.

DOES THIS PATIENT HAVE MALARIA? A META-ANALYSIS OF THE DIAGNOSTIC UTILITY OF CLINICAL FACTORS FOR ENDEMIC AND IMPORTED MALARIA

Steve M. Taylor

In endemic areas, the likelihood of finding parasitemia is increased by the presence of splenomegaly and hepatomegaly, but individual findings are overall of limited utility; clinical algorithms may be useful to risk-stratify patients but their performance is variable between settings. In returning travelers, the clinical assessment can provide substantial diagnostic benefit, but all patients still require laboratory testing.

IRON DEFICIENCY DECREASES THE RISK OF PLASMODIUM FALCIPARUM MALARIA AND DEATH IN CHILDREN

Moses M. Gwamaka

Iron supplementation in malaria endemic areas may increase malaria morbidity and mortality. We explored whether iron status alters malaria risk in Tanzanian children (N=785) living in an area of intense malaria transmission.

Compared to iron-replete children, children with ID had reduced prevalence of concurrent parasitemia (6.6-fold lower), hyperparasitemia (24.0-fold lower) and severe malaria (4.0-fold lower), and, if infected, 3.9 fold lower parasite density (all $P < 0.001$). ID predicted significant decreases in the odds of subsequent parasitemia (23% decrease, $P<0.001$) and subsequent severe malaria (38% decrease, $P=0.04$). Children with ID on half or more of their iron status measurements (N=407) had 63 % lower all cause mortality ($P = 0.04$) and 73% lower malaria-associated mortality ($P = 0.07$) compared to children with ID on fewer than half of their iron status measurements (N=378).

CHARACTERISTICS AND ETIOLOGY OF MODERATE-TO-SEVERE DIARRHEA OF PROLONGED OR PERSISTENT DURATION AMONG CHILDREN LESS THAN FIVE YEARS OLD IN RURAL WESTERN KENYA, 2008-2009

Katharine A. Schilling

A PROSPECTIVE AETIOLOGICAL, EPIDEMIOLOGICAL AND CLINICAL STUDY ON DIARRHOEAL DISEASE IN CHILDREN UNDER FIVE YEARS OF AGE IN HO CHI MINH CITY, VIETNAM

My V. Phan

FEMALE UROGENITAL SCHISTOSOMIASIS IN TANZANIA'S LAKE ZONE REGION: A HIGHLY-SPORADIC DISTRIBUTION AMONG WOMEN IN EIGHT RURAL VILLAGES

Jennifer A. Downs

In conclusion, FUS is sporadically distributed among women in northwest Tanzania, with some villages having rates of Schistosoma haematobium infection as high as 14% in women of reproductive age, while other nearby villages have none.

PREVALENCE AND INTENSITY OF SCHISTOSOMA SPP TWO YEARS AFTER A PRAZIQUANTEL TREATMENT AMONG SCHOOL-AGE CHILDREN FROM A RURAL VILLAGE IN MALI

Ngoy P. Mutombo

Praziquantel appeared to have a long term effect on S. haematobium but not on S. mansoni thought this might also suggest species-specifc differences in praziquantel treatment. Current control efforts do not attain suffcient reduction of schistosomiasis infection in this particular setting which points us to the need for additional control measures specifc to the 'Offce du Niger' irrigation scheme.

INCIDENCE AND ETIOLOGY OF ACUTE DIARRHEA IN A FRENCH MILITARY COHORT IN CHAD

Vincent Pommier de Santi

As the overall number of military personnel staying in N'Djamena slightly varied during the study period, diarrhoea incidence rates were also estimated for the 11 two-week-periods of stay. Independently of the risk of traveler's diarrhea due to poor sanitation environment confrmed by the study, our results underline the importance of relevant hygienic measures and primary care during military deployment.

CHARACTERISTICS OF MALNOURISHED CHILDREN WITH DIARRHEA IN A RURAL AREA IN EGYPT

Manal Mostafa

Malnourished children were more likely to be hospitalized due to diarrhea than better-nourished children (OR=2.4, 2.4 and 3.5) for wasted, stunted and both [wasted and stunted] compared to better nourished children, respectively ($p \leq 0.0001$). Cryptosporidium spp. was the only pathogen more commonly found among wasted and stunted children (10%, 9.5%) compared to better-nourished children (6%), p=0.006 and 0.01. In conclusion, a signifcant percentage of children in rural Egypt seeking diarrhea medical care are malnourished and experience greater severity of illness than better-nourished children with diarrhea.

ACCEPTABILITY OF A PRE-REFERRAL LIFE SAVING DRUG ADMINISTRATION FOR THE PREVENTION OF SEVERE MALARIA AND UPPER RESPIRATORY INFECTION RELATED DEATHS IN CHILDREN LIVING IN RURAL AREAS

Pascal Millet

Malaria and acute respiratory infections (ARI) worldwide account together for 25% of deaths among less than 5 years old children. Such therapy should be proposed in agreement with other health programmes related to malaria control such as the TDR/WHO artersunate rectal project, and the introduction of rapid diagnostic tests for malaria at the community level. However, drugs for the treatment of non-severe malaria should also be implemented to prevent misuse of the emergency treatment at the community level.

REDUCTION IN THE USE OF UNNECESSARY INJECTIONS IN MALARIA TREATMENT AMONG TERTIARY HEALTH INSTITUTIONS IN NIGERIA

Hamisu Hassan

A surprisingly large number of malaria cases in that country are still being treated at tertiary health care facilities instead of the primary health care level.

PREGNANCY-ASSOCIATED MALARIA IN RELATION TO FREE FETAL HEMOGLOBIN IN MATERNAL BLOOD AND SUSCEPTIBILITY TO DEVELOP PREECLAMPSIA

Caroline Pehrson

Pregnancy-associated malaria (PAM) and preeclampsia (PE) are major causes of maternal and perinatal mortality in developing countries. PAM results in sequestration of parasites in the placenta, causing placental infammation and impaired placental function.

FREQUENT SEVERE THROMBOCYTOPENIA IN CASES OF PLASMODIUM VIVAX MALARIA FROM THE PERUVIAN AMAZON

Salomon Durand

After commencement of malaria treatment, platelet recovery was rapid and occurred in all 10 studied cases by 48 or 72 hours. In conclusion, thrombocytopenia is very frequent in cases of P. vivax malaria in Peru, but it resolves within a few days after antimalarial treatment.

EXPLORING THE ANTIMALARIAL EFFECT OF ANTIRETROVIRAL PROTEASE INHIBITORS IN A COHORT OF HIV-INFECTED WOMEN RESIDING IN MALARIA-ENDEMIC AREAS OF SUB-SAHARAN AFRICA

James S. McCarthy

The distribution of malaria and HIV overlap in many regions of the world. Available evidence indicates that co-infection results in increased severity of malaria and increased viral replication, potentially accelerating the course of immunosuppression, and increasing HIV transmission. Some antiretroviral protease inhibitors (PI) have been demonstrated to show a moderate antimalarial effect. Among 26 subjects with available sera and a clinical, parasitologic or HRPII antigenemia-based diagnosis, a rise in malaria-specifc antibody titer was uncommon (1, 1 and 2 respectively). The lower than expected incidence of malaria in this population impeded exploration of the potential protection against malaria conferred by an antiretroviral regimen containing PIs with an antimalarial effect.

SEASONALITY AND AGE SPECIFIC MALARIA MORBIDITY IN DIDIENI, DISTRICT OF KOLOKANI, MALI

Alassane Dicko

Institut de richer biomédicale des armées-IRBA, Marseille, France

In Mali like most of sub-saharan African countries, most of the health centers do not have capacity to confrm the diagnosis of malaria and reported malaria cases are essentially based on presumptions. This resu to a lack of accurate measure of the malaria burden essential for the control and prevention strategies. To assess the place the malaria in the overall morbidity and its variation by age and season, a prospective survey was carried out in the community of Didieni. Malaria rapid diagnostic test (Optimal®) was performed in all suspected cases of malaria all the times during the study period. Data were recorded in special records books, doubled entered and analyzed. Of the 5565 cases of consultations, 1501 (27.0%) were due malaria representing the frst cause of consultations in the resident population. The frequency of malaria varied signifcantly with age and the season.

Most of cases 91.6% (1375/1501) occurred between August and December and mainly in children under 5 years of age 43.2% (648/1501).

THE IMPACT OF MALARIA ON THE UNITED STATES MILITARY: SEPTEMBER 2001 TO PRESENT

Cindy Tamminga

This ongoing threat to deployed personnel was highlighted in 2003 when 28% of a 290 person Joint Task Force was stricken with Plasmodium falciparum malaria infection despite being prescribed mefoquine for prophylaxis, necessitating the airlift evacuation of 44 U.S Marines to Germany or the U.S., fve of whom required admission to an intensive care unit (ICU). A total of 41 Marines were evacuated to the National Naval Medical Center (NNMC) in Bethesda, MD including three of the fve individuals requiring ICU support.

A PHASE 1B DOUBLE-BLIND RANDOMIZED CONTROLLED AGE-DEESCALATING TRIAL OF TWO VIROSOME FORMULATED ANTI-MALARIA VACCINE COMPONENTS ADMINISTERED IN COMBINATION TO HEALTHY SEMI-IMMUNE TANZANIAN ADULTS AND CHILDREN

Blaise Genton

Incidence rate of clinical malaria from day 120 (30 days post second vaccination) until day 365 was half in children injected with PEV3B than with Infexal V (0.00342 vs 0.00178, p=0.09). The safety data demonstrated that 2 vaccinations with PEV3B are safe and well tolerated. This study confrms that virosomes are a suitable delivery system for malaria peptide antigens in malaria semi-immune subjects, including children.

INTEGRATED CONTROL OF MALARIA AND HELMINTHS THROUGH UGANDA'S HEALTH SYSTEM

Ruth Ashton

Intestinal worms and schistosomiasis cannot be eliminated unless there is universal access to safe water and sanitation, however, such improvements are likely to take several decades in many African countries. In the interim, the mainstay of control is regular anthelmintic treatment. In recent years the Ugandan Ministry of Health has implemented mass treatment through community and school-based programmes. A total of 3016 subjects participated in the study (40.1% of 318). No serious adverse events occurred during this pilot community trial, and all observed AEs were mild in intensity (mainly diarrhea, headache, abdominal pain, nausea, vomiting). The number of subjects that reported at least one AE was signifcantly higher in the triple co-administration group (15.75%; 238/1511) as compared to the standard treatment group (18.98%; 286/1507) (OR= 1.26; 95% CI (1.04-1.53); p=0.018). Of note, the overall frequency of AEs in the triple therapy group, 18.98% (286/1507), was comparable or lower than published frequencies of AEs for A/I alone. These data suggest that coadministration of A/I and azithromycin is safe.

INTEGRATED CONTROL OF MALARIA AND HELMINTH THROUGH UGANDA'S HEALTH SYSTEM

Ruth Ashton

Intestinal worms and schistosomiasis cannot be eliminated unless there is universal access to safe water and sanitation, however, such improvements are likely to take several decades in many African countries. In the interim, the mainstay of control is regular anthelmintic treatment. In recent years the Ugandan Ministry of Health has implemented mass treatment through community and school-based programmes.

ANEMIA, IMPAIRED GROWTH AND EXERCISE INTOLERANCE IN KENYAN CHILDREN: THE ROLE OF SCHISTOSOMIASIS AND POLYPARASITISM

Amaya L. Bustinduy

We conclude that regardless of location-specifc differences between villages (season, slope and nutrition), polyparasitism represents a collective threat to children's health and integrated control approaches appear warranted. Ongoing studies, involving antibody testing for past exposures, malaria PCR and cytokine testing for parasite-mediated infammation, will refne prevalence estimates and immune response pathway associations.

EFFICACY OF ARTESUNATE-AMODIAQUINE (ASAQ) AND ARTEMETHER-LUMEFANTRINE (AL) FIXED DOSE COMBINATIONS (FDCS) FOR THE TREATMENT OF UNCOMPLICATED PLASMODIUM FALCIPARUM (PF) MALARIA IN NIMBA COUNTY, LIBERIA

Birgit Schramm

Monitoring therapeutic effcacy of recommended artemisinin-based combination therapies (ACTs) for treatment of uncomplicated Pf malaria is essential. Our objective was to assess the effcacy of ASAQ FDC in Liberia, where Pf malaria is largely perennial, and effcacy data scarce. Both ASAQ and AL were highly effcacious in the < 5year population in Nimba County, Liberia. Re-infection rates were high in both arms in this highly endemic setting. Both FDCs were safe and overall well tolerated. These findings describe for the frst time the performance of ACTs in Liberia.

A PROSPECTIVE COHORT STUDY TO EVALUATE INCIDENCE OF TUBERCULOSIS IN INFANTS, WESTERN KENYA

Grace K. Kaguthi

To intensify case fnding in infants in TB vaccine trials, the criteria for TB suspect identifcation need to be reconsidered, and go beyond contact history and Tb symptoms.

MATERNAL AND PLACENTAL MALARIA AND LOW BIRTH WEIGHT AFTER INTRODUCTION OF INTERMITTENT PREVENTIVE TREATMENT PROGRAM USING SULFADOXINE-PYRIMETHAMINE IN PREGNANT WOMEN IN BAMAKO, MALI, WEST AFRICA

Mahamadou Diakite

In 2006, the Malian government established a program for free insecticide-treated net (ITNs) and intermittent preventive treatment during pregnancy with sulfadoxine-pyrimethamine (IPTp-SP) for pregnant women.The prevalence of malaria in both mother and newborn has show a signifcant decrease in Bamako, compared with previous studies before the implementation of IPTp-SP policy in Mali. This study shows a high rate of coverage in use of IPTp-SP and ITNs correlated with low malaria prevalence in pregnant women.

MALARIA RESURGENCE IN WESTERN KENYA IN THE ERA OF MALARIA INTERVENTIONS

Guofa Zhou

Despite signifcant increases in the supply of mosquito bednets since 2006, the link between interventions and their impact is not always clear in malaria endemic south Sahara Africa. Despite a high household bed net coverage rate of 50-80%, asymptomatic malaria prevalence and mosquito density have increased in all study sites since 2007, with an approximate 4-10 fold increase in Anopheles funestus and An. gambiae densities. The increase in malaria prevalence and vector densities suggests that the current control methods are not suffcient and that future control effort

should include a more intensive distribution of long-lasting insecticidal nets and the provisions for a sustainable supply of effective antimalarial drugs.

SIGNIFICANT DECREASE IN ANEMIA IN AREAS OF VERY LOW MALARIA TRANSMISSION AFTER INTERRUPTION OF TRANSMISSION

Gregory S.

The potential effect of malaria control measures on prevalence of anemia in areas of low and unstable malaria transmission has not bee well characterized. In the adjoining highland areas of Kapsisiywa and Kipsamoite, Kenya, areas of low and unstable malaria transmission. Reduction or interruption of malaria transmission in these low transmission areas is associated with highly signifcant decreases in the prevalence of anemia.

BURDEN OF MALARIA IN HIV-POSITIVE PREGNANT WOMEN IN IBADAN, SOUTHWEST NIGERIA: AN ONGOING STUDY

Catherine O. Falade

Project, College of Medicine, University of Ibadan, Ibadan, Nigeria

Pregnancy and HIV infection individually increase susceptibility to malaria. This gives the HIV-positive pregnant woman a double burden. Malaria transmission is intense and occurs all year round in southwest Nigeria. The use of opportunistic infection chemoprophylaxis or antiretroviral therapy did not signifcantly infuence the prevalence of malaria parasitemia. malaria exerts significant burden on HIV positive women in southwest Nigeria. These findings underscore the need for an adequate regimen of IPTp as well as other malaria control efforts (ITN, IRS and prompt case management) specifcally targeted at HIV +ve women.

MARKED REDUCTION IN THE PREVALENCE OF MALARIA AND ANEMIA IN HIV-INFECTED PREGNANT WOMEN TAKING COTRIMOXAZOLE WITH OR WITHOUT SP-IPT IN MALAWI

Atupele Kapito-Tembo

Department of Community Health, College of Medicine, Blantyre, Malawi HIV-infected women are at risk for both malaria and other opportunistic infection. Current WHO guidelines recommend cotrimoxazole for all HIV-infected pregnant women. However, it is not known whether this regimen is as effective as sulfadoxine-pyrimethamine (SP) intermittent preventive therapy (IPTp) in preventing malaria.

INCIDENCE OF MALARIA EPISODES IN WEST AFRICAN ADULTS HIV-1 INFECTED PATIENTS EXPOSED OR NOT TO COTRIMOXAZOLE: MALHIV COHORT STUDY

Frédéric N. Ello

A key issue of the interrelation between HIV/AIDS and malaria is the impact of cotrimoxazole chemoprophylaxis on the natural history of malaria among HIV-infected patients. In conclusion, there is a trend of protection against malaria and fever episodes in HIV infected patients receiving cotrimoxazole in stable malaria transmission areas, even at lower CD4 cell counts.

UTILITY OF PARACHECK-PF™ MALARIA RAPID DIAGNOSTIC TEST FOR THE DIAGNOSIS OF MALARIA AT POINT OF CARE AMONG ADULT HIV-POSITIVE PATIENTS IN IBADAN SOUTH WESTERN NIGERIA: AN ONGOING STUDY

Catherine O. Falade

Paracheck pf™ malaria rapid diagnostic test accurately ruled malaria “in or out” at the point-of-care, facilitating appropriate clinical management and averting unnecessary antimalarial therapy.

DIAGNOSIS OF IMMUNE RECONSTITUTION INFLAMMATORY SYNDROME IN SCHISTOSOMIASIS PATIENTS UNDERGOING HIGHLY ACTIVE ANTIRETROVIRAL THERAPY IN WESTERN KENYA

Erick M. Muok

The immune reconstitution infammatory syndrome (IRIS) is a frequent complication seen in HIV-TB co-infected patients during successful highly active antiretroviral therapy (HAART). The prevalence of S. mansoni infections in this population was over 90% while that of HIV infection was 16%, and 67.9 % of those that were HIV positive had dual infections. Only 4% had detectable liver pathology at baseline. The intensity of schistosome infection had no infuence on either the percentage of T helper cells (CD4+) ($p = 0.3640$) or the frequency of viral load copies ($p = 0.8470$).

PHARMACOVIGILANCE OF ARTEMETHER-LUMEFANTRINE IN PREGNANT WOMEN FOLLOWED UP UNTIL DELIVERY IN RWANDA

Stephen Rulisa
Academic Medical Center, Division of Infectious Diseases,
Tropical Medicine and AIDS, Amsterdam, The Netherlands

Antimalarial drugs that are considered safe during pregnancy become increasingly ineffective. Many countries shifted their treatment guidelines to artemisinin combination treatment (ACT). WHO recommends ACT for uncomplicated falciparum malaria in the second and third trimester of pregnancy. In Rwanda, the current policy recommends treatment with artemether-lumefantrine (AL) for malaria during the second and third trimester of pregnancy. The slight difference in AEs and pregnancy outcomes between the groups may be due to malaria itself but needs to be assessed further.

NOVEL SYNTHETIC OZONIDE OZ439: TOLERABILITY AND PHARMACOKINETICS IN HEALTHY VOLUNTEERS

Joerg J. Moehrle

OZ439 is a synthetic ozonide (1,2,4-trioxolane) that has potential value as a peroxide antimalarial agent.

PREGNANCY-ASSOCIATED MALARIA IN RELATION TO FREE FETAL HEMOGLOBIN IN MATERNAL BLOOD AND SUSCEPTIBILITY TO DEVELOP PREECLAMPSIA

Caroline Pehrson

Measurements at multiple time-points will be used to investigate the longitudinal changes in plasma HbF throughout the pregnancy in relation to subsequent development of PIH, PE and eclampsia.

FREQUENT SEVERE THROMBOCYTOPENIA IN CASES OF PLASMODIUM VIVAX MALARIA FROM THE PERUVIAN AMAZON

Salomon Durand

Thrombocytopenia has been described as a complication related to Plasmodium falciparum malaria and less frequently to vivax malaria, but recent reports in South America have described a frequent association between thrombocytopenia and vivax malaria.

EXPLORING THE ANTIMALARIAL EFFECT OF ANTIRETROVIRAL PROTEASE INHIBITORS IN A COHORT OF HIV-INFECTED WOMEN RESIDING IN MALARIA-ENDEMIC AREAS OF SUB-SAHARAN AFRICA

James S. McCarthy

THE TRIPLE CO-ADMINISTRATION OF ALBENDAZOLE, IVERMECTIN AND AZITHROMYCIN IS SAFE IN A LYMPHATICFILARIASIS AND TRACHOMA CO-ENDEMIC AREA OF SIKASSO, MALI

Yaya I. Coulibaly

Neglected tropical diseases (NTDs) are coendemic in many areas of the world, including subsaharan Africa. To quantify burden of disease among children living in areas endemic for multiple parasites, we conducted surveys of affected villages in coastal Kenya. The objectives of the study are to measure the co-prevalence of S. haematobium, flariasis, malaria, hookworm, and other geohelminths among residents 5-18 yrs old, and to determine the relationship between parasite load and co-infections with the morbidity outcomes of anemia, reduced ftness, and undernutrition. An open-label, randomized controlled non-inferiority trial compared the genotype-corrected Day42 cure rates of ASAQ FDC (ASAQ Winthrop®) to AL (Coartem®) in children <5 years (6% non-inferiority margin; one-sided a 5%, power 80%). Day7 desethyl-amodiaquine and lumefantrine concentrations were measured. Three-hundred children age 6-59 months with uncomplicated Pf malaria, were randomized to 3 days of observed ASAQ (once a day) or AL (twice a day) prescribed by weight.

MALARIA RESURGENCE IN WESTERN KENYA IN THE ERA OF MALARIA INTERVENTIONS

Guofa Zhou

A PHASE 4 RANDOMISED STUDY TO ASSESS THE TOLERABILITY OF ARTESUNATE-AMODIAQUINE (ASAQ) AND ARTEMETHER-LUMEFANTRINE (AL) FIXED DOSE COMBINATIONS (FDCS) FOR THE TREATMENT OF UNCOMPLICATED PLASMODIUM FALCIPARUM (PF) MALARIA IN LIBERIA

Birgit Schramm

Drugs for Neglected Diseases initiative, Geneva, Switzerland

Thorough assessment of the tolerability of new artemisinin-based combination therapies (ACTs) in the post-registration phase is needed, especially for the detection of adverse events (AEs) of potential concern such as haematological, liver or neurological toxicities. Notably, hepatotoxicity, neutropenia, anemia or clinically signifcant neurological toxicities were of no major concern in this study. Effcacy was high with both treatments.

A PHASE 4 RANDOMISED STUDY TO ASSESS THE TOLERABILITY OF ARTESUNATE-AMODIAQUINE (ASAQ) AND ARTEMETHER-LUMEFANTRINE (AL) FIXED DOSE COMBINATIONS (FDCS) FOR THE TREATMENT OF UNCOMPLICATED PLASMODIUM FALCIPARUM (PF) MALARIAIN LIBERIA

Birgit Schramm

Thorough assessment of the tolerability of new artemisinin-based combination therapies (ACTs) in the post-registration phase is needed, especially for the detection of adverse events (AEs) of potential concern such as haematological, liver or neurological toxicities. Notably, hepatotoxicity, neutropenia, anemia or clinically signifcant neurological toxicities were of no major concern in this study. Effcacy was high with both treatments.

A SURVEY ON CLINICAL SAFETY OF 8-AMINOQUINOLINES

Hla Yin Myint1
Colin Ohrt
Research Unit, Mahidol University, Bangkok, Thailand

The 8-aminoquinoline (8-AQ) antimalarials are the only class effective against Plasmodium vivax relapse and P. falciparum gametocytes. No deaths were reported in other 8-AQs. In conclusion, this database will help public health offcial make risk-beneft decisions about of the use of the class of drugs for routine malaria management and in elimination operations.

A RANDOMISED, DOUBLE-BLIND PLACEBO CONTROLLED TRIAL OF TWO DIFFERENT DOSING REGIMENS OF DIHYDROARTEMISININ-PIPERAQUINE FOR INTERMITTENT PREVENTIVE TREATMENT OF ADULTS AT HIGH RISK OF MALARIA IN THAILAND

Khin Maung Lwin

Piperaquine is an effective antimalarial with a long elimination half life coformulated with dihydroartemisinin (DP). Monthly DP treatment brought about a dramatic reduction in the incidence of clinical episodes of malaria in adults compared to placebo and may be considered as an alternative malaria control strategy in high risk groups.

EVALUATION OF THE COMPARATIVE EFFICACY AND SAFETY OF ARTEMETHER-LUMEFANTRINE, ARTESUNATE PLUS AMODIAQUINE AND ARTESUNATE PLUS AMODIAQUINE PLUS CHLORPHENIRAMINE (ARTEMOCLO™) FOR ACUTE UNCOMPLICATED MALARIA IN NIGERIAN CHILDREN

Catherine O. Falade

Artemisinin based combination therapy (ACT) is the current gold standard for the treatment of acute uncomplicated malaria. Amodiaquine (AQ) plus artesunate (AS) is one of the preferred ACTs. Chlorpheniramine (CP) has been shown to enhance the effcacy of amodiaquine. The three ACTs were well tolerated. In conclusion, the three drugs were effcacious and safe. AQC gave non-signifcant higher ACPR than the other two on days 28 and 42. The better hematological recovery and parasite clearance with AQC on day 2 may be a fne indication of the enhancement ASAQ effect.

INTERMITTENT PREVENTIVE TREATMENT WITH SULFADOXINE-PYRIMETHAMINE IN PREVENTING MALARIA AND ANEMIA IN PREGNANCY AMONG WOMEN VISITING KORLE-BU TEACHING HOSPITAL, ACCRA, GHANA

Nana O. Wilson

Malaria and anemia takes a great toll on women in sub-Saharan Africa in terms of maternal morbidity and adverse birth outcomes.

COST AND COST-EFFECTIVENESS OF INTERMITTENT PREVENTIVE TREATMENT OF MALARIA IN INFANTS WITH SULFADOXINE PYRIMETHAMINE IN SENEGAL

Mouhamed Ndiaye

The cost per death averted was $ 447, per year of life saved $ 23.84 and per DALYs $ 25.39. In conclusion, IPTi with SP through EPI can be scaled up successfully at a low cost. Using pooled effcacy results from previous IPTi trails we can see that it is a highly cost effective intervention in the study sites selected. But, the IPTi cost-effectiveness in the other areas in Senegal where malaria transmission is not high, worth assessing.

EFFICACY OF CHLOROQUINE OR ARTEMETHER-LUMEFANTRINE AGAINST PLASMODIUM VIVAX AND ARTEMETHER-LUMEFANTRINE AGAINST UNCOMPLICATED PLASMODIUM FALCIPARUM MALARIA IN CENTRAL ETHIOPIA

Bereket Hailegiorgis

In-vivo effcacy assessments of the frst-line treatments for both Plasmodium falciparum (Pf) and Plasmodium vivax (Pv) are essential for effective case management in Ethiopia. Molecular studies may help to differentiate recrudescence from new infections, but in either case, CQ was more effective than AL in delaying the recurrent parasitemia. Effectively managing Pv relapse poses a major challenge to malaria control.

MONITORING EX VIVO MALARIA DRUG SUSCEPTIBILITY IN SENEGAL AFTER INTRODUCTION OF ARTEMISININ-BASED COMBINATION THERAPIES

Papa Diogoye Sene

With changing drug use, sensitivities to some drugs (such as chloroquine) are increasing. Decreasing responses to artemisinin suggests that parasites may become less responsive to these compounds and that careful monitoring is required. The decrease of artemisinin sensitivity and the increase of chloroquine sensitivity need to be continually monitored in order to inform drug policy makers.

RECTAL AND INTRAVENOUS ARTESUNATE FOR SEVERE MALARIA: MODELLING THE IMPACT OF ARTEMISININ RESISTANCE

Richard J. Maude

SULPHADOXINE-PYRIMETHAMINE BASED COMBINATION THERAPY IN TREATMENT OF UNCOMPLICATED MALARIA IN MALI: A RANDOMIZED CLINICAL TRIAL IN TWO VILLAGES ON CHILDREN LESS THAN FIVE YEARS

Maiga Hamma

Artemisinin-based combination therapies are now frst line drugs in malaria treatment in Africa. In conclusion, sulphadoxine-pyrimethamine only and its combination with artesunate or amodiaquine are clinically and parasitologically effective in Mali.

RELATIONSHIP BETWEEN CHLOROQUINE USE AND CHLOROQUINE RESISTANCE IN SUB-SAHARAN AFRICA

Meera Venkatesan

Despite policy changes from chloroquine (CQ) and sulfadoxine-pyrimethamine to artemisinin-combination therapy (ACT) as the primary treatment for uncomplicated malaria in most malaria-endemic countries, these compromised drugs are still widely used. Reported use of CQ varied in East Africa, ranging from < 1% to nearly 50%. To investigate the effect of continued CQ pressure on drug resistance, we compared drug use data from all available national surveys (between 2000 and 2007) with temporal trends in the prevalence of CQ resistance marker pfcrt 76T from published studies in 7 African countries. The proportion of resistant genotypes stayed stable over time in three countries with sustained high CQ use (Burkina Faso, Guinea Bissau and Uganda). The prevalence of pfcrt 76T increased in Niger, the only country reporting increased CQ use during the survey period, and declined in three countries exhibiting low or sharply decreasing CQ use (Malawi, Tanzania and Kenya). These fndings suggest that with declining use of CQ, we may expect to fnd a decline in CQ-resistant malaria. As ACT availability continues to expand in the region, CQ-susceptible malaria may begin to predominate in sub-Saharan Africa in the near- to medium-term future.

ANTENATAL INFECTION WITH LYMPHATIC FILARIASIS INCREASES SUSCEPTIBILITY TO MALARIA IN KENYAN CHILDREN

Indu Malhotra

Thus, flariasis and malaria co-infections during pregnancy enhance risk for malaria infection in their offspring, possibly through a mechanism of immune suppression to protective malaria blood stage antigens. Treatment of flariasis and other helminths in pregnant woman may reduce the risk of malaria for their children.

ASSOCIATION BETWEEN PLASMODIUM FALCIPARUM ANTIBODY RESPONSES AND AMODIAQUINE-SULFADOXINE-PYRIMETHAMINE TREATMENT FAILURE IN KAMPALA, UGANDA

Chris Keh

Elimination of Plasmodium falciparum after partially effective therapy is infuenced by host immunity. We previously showed that responses to treatment for uncomplicated malaria with amodiaquine-sulfadoxine-pyrimethamine (AQ+SP) were associated with surrogates of immunity, including age and proximity to a mosquito breeding site. Our fndings demonstrate that antibody responses to AMA1 are associated with blood-stage immunity as measured by host clearance of parasites in the setting of partially effective therapy.

SUBOPTIMAL MANAGEMENT OF SEVERE MALARIA CASES IN UGANDAN HEALTH FACILITIES: A CROSS SECTIONAL SURVEY

Jane Achan

Malaria morbidity and mortality in Africa remains unacceptably high, partly due to sub-optimal case management. Severe malaria was correctly diagnosed in 27 % (233/868) of the patients. Though the quinine dose and regimen was correct in the majority of patients (611/868, 70%), it was administered in the correct volumes of 5 % dextrose in only 18% (147/815) of the cases. Most patients (80%) had several doses of quinine administered in one single 500ml bottle of 5% dextrose.

AN ASSESSMENT OF ADHERENCE TO ARTEMETHER-LUMEFANTRINE FOR THE TREATMENT OF UNCOMPLICATED MALARIA IN PHALOMBE, MALAWI, 2009

Kimberly E. Mace

AL over other medications (odds ratio (OR) 2.7, $p<0.001$), use of AL package for instructions, (OR 2.5, $p=0.02$), and direct observation of the frst dose of AL (OR 2.4, $p<0.01$). In contrast, being <5 years old was associated with non-adherence (OR 0.5, $p=0.05$). In conclusion, two-thirds of patients assessed were completely adherent to a six-dose AL regimen for the treatment of uncomplicated malaria. Efforts to improve adherence should focus on children <5 years old, the age-group most vulnerable to malaria. Interventions including direct observation of the frst dose, utilization of the AL package for instructions, and enhancing patient preference for AL have the potential to increase adherence and therefore improve cure rates, and possibly mitigate antimalarial drug resistance.

INTERMITTENT PREVENTIVE THERAPY IN PREGNANCY WITH SULPHADOXINE-PYRIMETHAMINE (SP); 42 DAY IN-VIVO FOLLOW-UP STUDY AMONG ASYMPTOMATIC PARASITEMIC PREGNANT WOMEN IN AN AREA WITH HIGH SP RESISTANCE IN SOUTHERN MALAWI

Linda Kalilani

Intermittent preventive treatment in pregnancy (IPTp) with sulphadoxine-pyrimethamine (SP) is recommended by the World Health Organization. These preliminary results of the in-vivo

follow-up suggest high rates of recrudescence and reinfection in primi-, and secundi-gravidae receiving IPTp with SP. This raises concern about the longevity of IPTp-SP in southern Malawi and stresses the need to explore alternative drugs to replace SP or alternative strategies to replace IPTp.

EXCEPTA OF SOCIAL WORK AND HEALTH CARE PROBLEMES IN COMMUNICABLE DISEASES – TB, HIV AND VARIA

J. Sokolova, J. Muli Mutuku, I. Kmit, J. Suvada, G. Mikolasova, J. Bartosovic, M. Michalcik, J. Bozik, L. Varkonova, M. Prasilova, Y. Rajab, O. Shakurfo, H. Nyadisaba, L. Benson, B. Timona Alumbashi, N. Bujdova, L. Pichonska, R. Babela, B. Irad, V. Noskova, S. Kompas, P. Slavikova, N. Danisova, R. Hochman, E. Misikova, F. Doci, Z. Tulipan

SEUC Bratislava, Univesity of Trnava, Slovak Republic

Abstract: Curent exceptta medica from Lancet, CID, JID and other journals are critically, rewieved and discussed

TBC

Effect of prophylactic paracetamol administration at time of vaccination on febrile reactions and antibody responses in children: two open-label, randomised controlled trials
Roman Prymula
Lancet 2009, 374: 1339-50
Although fever is part of the normal inflammatory process after immunisation, prophylactic antipyretic drugs are sometimes recommended to allay concerns of high fever and febrile convulsion. Although febrile reactions significantly decreased, prophylactic administration of antipyretic drugs at the time of vaccination should not be routinely recommended since antibody responses to several vaccine antigens were reduced.

Clinical evaluation of QuantiFERON TB-2G test in patients with healed pulmonary tuberculosis
Yoshihiro Kobashi
J Infect chemother (2009) 15: 288-292
Abstract
We evaluated the response to the QuantiFERON TB-2G (QFT-2G) test in patients with healed pulmonary tuberculosis (TB) compared to the response in those with active pulmonary TB. The subjects were 208 patients with healed pulmonary TB and 155 patients with active pulmonary TB. Because many patients continued to show a positive response to the QFT-2G test even when a long period had posed after the completion of the antituberculosis treatment i tis suggested that, in patients with a previous history of TB, particular attention must be paid to the relapse of TB or reinfection with TB.

Impact of Immigration on Pulmonary Tuberculosis in Spanish Children
Teresa del Rosal
The pediatric Infectious Disease Journal, Vol. 29, No. 7, july 2010
We observed an increase in extrafamilial contacts (8% in 1978 – 1987 and 18% in 1998 – 2007, $P<0.01$), including 4 cases of immigrant caretakers. Tuberculosis in immigrant children has increased with time: 2% in the period 1978 – 1987, 6% in 1988 – 1997 and 46% in 1998 – 2007 ($P<0.001$). The primary resistance rate to isoniazid in our population was 6.5%.
Tuberculosis in our area continues to be a major health problem, especially among foreign-born children. As drug-resistant strains are increasing, initial therapy with 4 drugs is recommended in our population.

Exposure of Dentists to Mycobacterium tuberculosis, Ibadan, Nigeria
Simeon I.
Emerging Infectious Diseases, Vol. 16, No. 9, Sept 2010
To determine the prevalence of Mycobacterium tuberculosis infection among dental patients and to assess dentists risk for exposure, we conducted a study among dental patients at a large tertiary hospital in Nigeria a country where tuberculosis is endemic. Ten (13%) of 78 sputum samples obtained were positive for M. tuberculosis.

The Changing Epidemiology of Invasive Pneumococcal Disease in Aboriginal and Non-Aboriginal Western Australians from 1997 through 2007 and Emergence of Nonvaccine Serotypes
Deborah Lehmann
Clinical Infectious Diseases 2010, 50: (11): 1477-1486
IPD incidence rates have decreased markedly among children and non-Aboriginal adults with a 3-dose infant 7vPCV Schedule. However, IPD due to non-7vPCV serotypes has increased and is of particular concern among young Aboriginal adults, for whom an intensive 23vPPV campaign is needed. An immunization register covering all age groups should be established.

Transmission of Streptococcus pneumoniae in Rural Gambian Villages: A Longitudinal study
Philip C. Hill
Clinical Infectious Diseases 2010, 50 (11): 1468-1476
To prepare for national introduction of pneumococcal vaccine of restricted valency, we studied the pattern of nasopharyngeal carriage of Streptococcus pneumoniae and its transmission in Gambian village over time. Carriage was more common among children than adults for all serotypes studied except 9V. there was an overall trend toward shorter carriage with increasing age (P=.043). This longitudinal carriage study in gambian villages provides unique information on the pattern of spread of S. pmeumoniae in rural Africa and a baseline for evaluating the impact of the introduction of pneumococcal conjugate vaccine into the region.

Prevention of Acute Myocardial Infarction and Stroke among Elderly Persons by Dual Pneumococcal and Influenza Vaccination: A Prospective Cohort Study
Ivan F. Hung
Clinical Infectious Diseases 2010, 51(9): 1007-1016
Despite World health Organization recommendations, the rate of 23-valent pneumococcal (PPV) and influenza (TIV) vaccination among elderly persons in Hong Kong, China, is exceptionally low because of doubts about effectiveness of vaccination. The efficacy of dual vaccination remains unknown.
At week 64 from commencement of the study, dual-vaccinees experienced fewer deaths (hazard ratio (HR), 0.65, 95% confidence interval (CI), 0.55-0.77), P<.001) and fewer cases of pneumonia (HR, 0.57, 95%CI, 0.51-0.64, P<.001) ischemic stroke (HR, 0.67) and acute myocardial infarction (HR, 0.52, 95%,), compared with unvaccinated subjects.
Dual vaccination with PPV and TI Vis effective in protecting elderly persons with chronic illness from developing complications from respiratory, cardiovascular and cerebrovascular diseases, thereby reducing hospitalization, coronary or intensive care admission and death.

Incidence of pneumonia, bacteremia, and invasive pneumococcal disease in Pakistan children
Aatekah Owais
Tropical Medicine and International Health, Vol. 15, No. 9, PP1029-1036, Sept 2010
A pathogen was isolated from the blood of 29 (2.8%) pneumonia cases. Bacteremia incidence was 912 (95% CI: 648-1248) episodes per 100 000 child-years with a case fatality rate of 8%. The under-five mortality rate was 55 per 1000 live births, with pneumonia causing 12 (22%) deaths among children<5 years old. Clinical pneumonia is common in Pakistani children, with one in four deaths attributable to the disease. Bacteremia occurs at a high rate but surveillance for pneumococcus underestimates the burden of IPD.

Global burden of acute lower respiratory infections due to respiratory syncytial virus in young children: a systematic review and meta-analysis
Harish Nair
Lancet 2010, 375: 1545-55
Interpretation Globally, RSV is the most common cause of childhood ALRI and a major cause of admission to hospital as a result of severe ALRI. Mortality data suggest that RSV is an important cause of death in childhood from ALRI after pneumococcal pneumonia and Haemophilus influenzae type b. The development of novel prevention and treatment strategies should be accelerated as a priority.

Evaluation of the routine use of amoxicillin as part of the home-based treatment of severe acute malnutrition
Indi Trehan
Tropical Medicine and International Health
This review of two therapeutic feeding programmes suggests that children with severe acute malnutrition who were treated without amoxicillin did not have an inferior rate of recovery.

Factors Associated with the Occurrence of hearing Loss after Pneumococcal Meningitis
Lise Worsee
Clinical Infectious Diseases 2010, 51(8): 917-924
By applying multivariate logistic regression analysis, we found that advanced age, female sex, and a certain serotype were significant risk factors, because fewer patients with serotype 6B had hearing loss than did patients with serotype 12F (P=.03), which was the most commonly occuring serotype.
Hearing loss is common after pneumococcal meningitis, and audiometry should be performed on all those who survive pneumococcal meningitis. Important risk factors for hearing loss are advanced age, female sex, severity of meningitis, and bacterial serotype.

HIV

Treatment options in HIV
Paul E. Sax, MD
Infectious disease special edition 2009

Treatment-Naēve Patients
Among clinical trials in treatment-naēve patients, the most important study compared twice-daily raltegravir (RAL, Isentress, Merck) with once-daily efavirenz (EFV, Sustive, Bristol-Myers

Squibb), patients in both treatment arms also received coformulated tenofovir (TDF)/emtricitabine (FTC, Emtrive, Gilead Sciences). At 48 weeks, patients in the RAL arm were noninferior virologically to patients in the EFV arm, and also experienced fewer drug-related adverse effects. These results suggest that RAL should be considered among first-line options for ART, as EFV to this point has in many ways been the gold standard „third drug". A study of oncedaily dosing of RAL is underway.

For treatment-experienced patients, the use of newer agents-both in older drug classes-has led to unprecedented rates of virologic suppression. For example, in the TRIO study, 86% of patients receiving the combination of RAL, etravirine (ETV, Intelence, Tibotec) and darunavir (DRV, Prezista, Tibotec) (plus other active agents if indicated) achieved an undetectable HIV RNA-a rate that would have been unfathomable just a few years ago.
In the upcoming year. It is anticipated that we will see important study data on several newer agents, including the non-nucleoside reverse transcriptase inhibitor rilpivirine (TMC278) the integrase inhibitor elvitegravir (Gilead Sciences) – which is being developed as part of a „quad" pill containing TDF/FTC and GS-9350 (an investigational pharmacikinetic booster) and the integrase inhibitor S/GSK1349572. As the era of effective ART moves well into its second decade, the progress has been truly remarkable.

Definition and epidemiology of late presentation in Europe
Margaret Johnson
Antiviral Therapy 2010, 15, Suppl 1:3.8 (doi: 10.3851/IMP 1522)
In Europe, the most common definitions of late presentation are based on CD4 T-cell counts, but there is little consistency among definitions.
The estimates that are available vary markedly, from 10% in one Swiss analysis (15) to 45% in a Swedish study(16) and as discussed, i tis likely that a substantial amount of this variance is the result of the use of different definitions.

Medical and societal consequences of late presentation
Santiago Moreno
Antiviral Therapy 2010, 15 Suppl 1:9 – 15(doi: 10.3851/IMP1523)
The increased risk for opportunistic diseases and increased mortality are associated with low CD4 T-cell counts.
Earlier testing for HIV – how do we prevent late presentation?
Yazdan Yazdanpanah
Antiviral Therapy 2010, 15 Suppl. 1:17-24 (doi: 10.3851/IMP1526)

This article explores the need to ensure earlier identification and treatment of late-presenting patients by reviewing trategies that might be considered. Thery should also take advantage of rapid testing Technologies and be aware of barriers to HIV testing among specific groups to provide opportinities for testing that are relevant to local communities.

Antiretroviral Therapies in Women after Single-Dose nevirapine Exposure
S. Lockman
N Engl J. Med 2010, 363:1499-509
Peripartum admionistration of single-dose nevirapine reduces mother-to-child transmission of human immunodeficiency virus type 1 (HIV-1) but selects for nevirapine-resistant virus.
The primary end point was the time to confirmed virologic failure or death.

Significantly more women in the nevirapine group reached the primary end point than in the ritonavir-boosted lopinavir group (26% vs. 8%) (adjusted P=0.001).
Among 500 women without prior exposure to single.dose nevirapine, 34 of 249 in the nevirapine group (14%) and 36 of 251 in the ritonavir-boosted lopinavir group (14%) had virologic or died.
In women with prior exposure to peripartum single-dose nevirapine (but not in those without prior exposure), ritonavir-boosted lopinavir plus tenofovir-emtricitabine was superior to nevirapine plus tenofovir-emtricitabine for initial antiretroviral therapy.

Antiretroviral Treatment for Children with Peripartum nevirapine Exposure
Paul Palumbo
N Engl. J. med. 2010, 363:1510-20

Single- dose nevirapine is the cornerstone of the regimen for prevention of mother-to-child transmission of human immunodeficiency virus (HIV) in resource-limited settings, but nevirapine frequently selects for resistant virus in mothers and children who become infected despite prophylaxis. The optimal antiretroviral treatment trategy for children who have had prior exposure to single-dose nevirapine is unknown.
More children in the nevirapine group than in the ritonavir-boosted lopinavir group reached a primary end point (39,6% vs. 21,7%, weighted difference, 18,6 percentage-points, 95% confidence interval, 3,7 to 33,6, nominal P=0.02). Baseline resistance to nevirapine was detected in 18 of 148 children (12%) and was predictive of treatment failure.
Among children with prior exposure to single-dose nevirapine for perinatal prevention of HIV transmission, antiretroviral treatment consisting of zidovudine and lamivudine plus ritonavir-boosted lopinavir resulted in better outcomes than did treatment with zidovudine and lamivudine plus nevirapine.

Preventing Mother-to-Child Tramsmission of HIV – protecting This Generation and the next
Marc Lallemant
N Engl. J. med. 363, 16 NEJM.ORG, October 14, 2010
Approximately half of the 33,4 milion persons living with the human immunodeficiency virus (HIV) worldwide are women of reproductive age, and among the 2,1 million HIV-infected children, virtually all were infected during pregnancy, delivery, or breast-feeding.
In 2008, almost half of HIV-infected pregnant women received antiretroviral medications for the prevention of mother-to-child transmission. In most cases, the simplest intervention, single-dose nevirapine, was given to the mother during labor and to the infant after birth. Nevirapine halves the risk of peripartum transmission but persists at clinically significant levels for days, potentially selecting HIV resistance mutations that may negatively affect the efficacy of nevirapine-based therapies when mothers and infected children subsequently require treatment for their own health. This poses an important public health challenge, since nevirapine-based therapies are the most widely available and affordable treatments in resource-limited countries, where more than 95% of infections in infants and children occur.

PRO2000 vaginal gel for prevention of HIV-1 infection (Microbicides Development programe 301): a phase 3, randomised, double-blind, paralel-group trial
Sheena McCormack
Lancet 2010, 376: 1329-37
Innovative prevention strategies for HIV-1 transmission are urgently needed. PRO2000 vaginal gel was efficacious against HIV-1 transmission in studies in macaques, we aimed to assess efficacy and

safety of 2% and 0,5% PRO2000 gels against vaginal HIV-1 transmission in sub-Saharan Africa. Although safe, 0,5% PRO2000 are not afficacious against vaginal HIV-1 transmission and are not indicated for this use.

Drug resistance is widespread among children who receive long-term antiretroviral treatment at a rural Tanzanian hospital

Clara Bratholm

J Antimicrob Chemother 2010, 65: 1996-2000

To assess long-term virological efficacy and the emergence of drug resistance in children who receive antiretroviral treatment (ART) in rural Tanzania.

Median duration of ART at the time of the survey was 40 months (range 11-61months). Only 8 children were virologically suppressed (≤40 copies/mL), whereas 11 children had clinically relevant resistance mutations in the reverse transcriptase gene. The most frequent mutations were M184V (n=11), conferring resistance to lamivudine and emtricitabine and Y181C (n=4), G190A/S (n=4) and K103N (n=4), conferring resistance to NNRTIs. Of concern, three children had thymidine analogue mutations, associated with cross-resistance to all nucleoside reverse transcriptase inhibitors. Despite widespread resistance, however only one child experienced a new WHO stage 4 event and none had a CD4 cell count of<200 cells/mm^3.

Among children on long-term ART in rural Tanzania,>50% harboured drug resistance. Results for children were markedly poorer than for adults attending the same programe, underscoring the need for improved treatment strategies for children in resource-limited settings.

Growth of infants born to HIV-infected women in South Africa according to maternal and unfant characteristics

Tropical Medicine and International Health, Vol. 15, No. II, pp. 1364-1374, November 2010

Kartik K. Venkatesh

Hiv-infected infants were more likely to be stunted and wasted than uninfected infants, which often occured within 3 months after birth. Infants who were born to mothers with advanced HIV disease, formula-fed and co-infected with HIV and gastrointestinal infections were at greater risk for growth disturbances.

Christopher J. Bruno, Jeffrey M. Jacobson. Ibalizumab: an anti-CD4 monoclonal antibody for the treatment of HIV-1 infection J. Antimicrob. Chemother. (2010) 65(9): 1839-1841 first published online July 17, 2010 doi:10.1093/jac/dkq261

Ibalizumab, a humanized monoclonal antibody to CD4, the primary host cellular receptor for HIV-1 entry, has been shown to block HIV-1 entry in vitro. Its unique mode of action reduces the risk of cross-resistance with currently available antiretroviral agents, with the potential to expand the choices available to treat drug-resistant HIV-1.

VARIA

Diabetes in sub-Saharan Africa

Autor (Lancet) použité v knižnici - rok 2009/2010

In Sub-Saharan Africa, prevalence and burden of type 2 diabetes are rising quickly. Rapid uncontrolled urbanisation and major changes in lifestyle could be driving this epidemic. The increase presents a substantial public health and socioeconomic burden in the face of scarce resources. Some types of diabetes arise at younger ages in African than in European populations. Ketosis-prone

atypical diabetes is mostly recorded in people of African origin, but its epidemiology is not understood fully because data for pathogenesis and subtypes of diabetes in sub-Saharan African communities are scarce. The rate of undiagnosed diabetes is high in most countries of sub-Saharan Africa, and individuals who are unaware they have the disorder are at very high risk of chronic complications. Therefore, the rate of diabetes-related morbidity and mortality in this region could grow substantially. A multisectoral approach to diabetes control and care is vital for expansion of socioculturally appropriate diabetes programmes in sub-Saharan African countries.

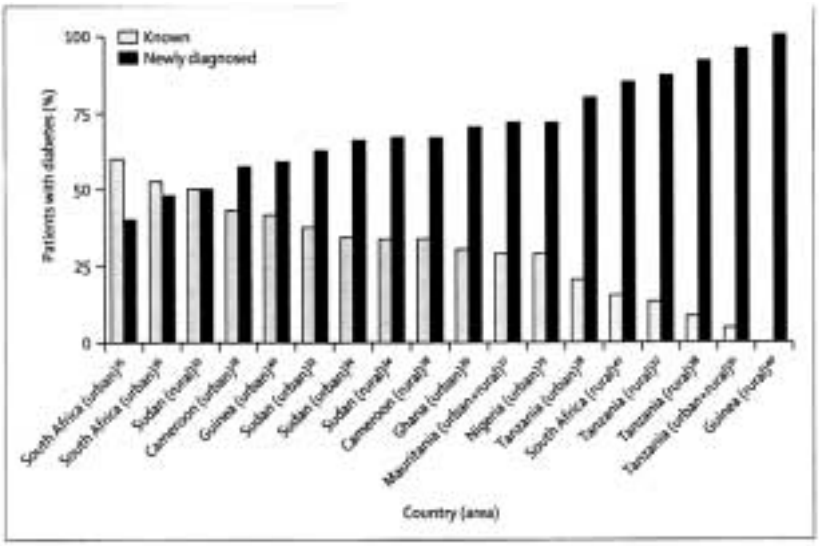


Figure 1: Known and newly diagnosed diabetes mellitus in community surveys in Africa

The disorder is low: 0.33 per 1000 in Nigerian and 0.95 per 1000 in Sudanese schoolchildren. Reported incidence was low in Tanzania and high in Sudan (10.1 per 100 000 per year).

1985 WHO criteria
Sudan
Elbagir (1996)
Both 3.4.
Urban 3.9
Rural 2.6
Elbagir (1998)
Both 10.4
Urban 12.1
Rural 7.5
South Africa
Motala (2008)
Rural 3.9
Kenya
Christensen (2009)
Both 4.2

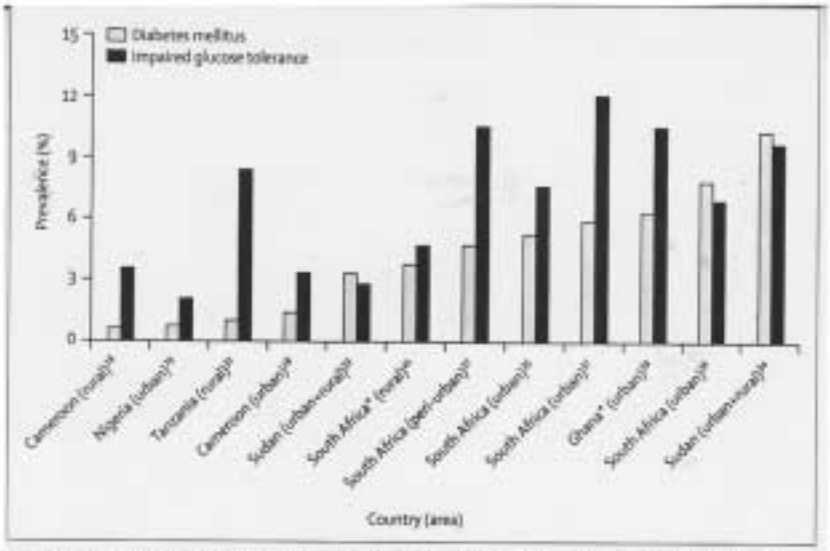
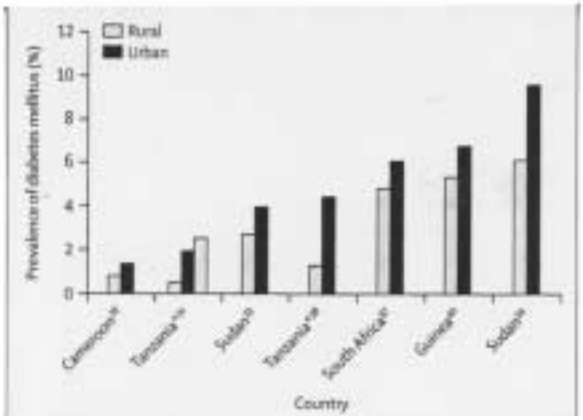


Figure 2: Prevalence of diabetes mellitus and impaired glucose tolerance in community surveys in Africa
*1998 WHO criteria



Effectiveness of five artemisinin combination regimens with or without primaquine in uncomplicated falciparum malaria: an open-label randomised trial

Frank Smithuis

Lancet Infect Dis 2010, 10: 673-81

Artemisinin-combination therapy (ACT) is recommended as first-line treatment of falciparum malaria throughout the world and fixed-dose combinations are preferred by WHO, wheter a single gametocytocidal dose of primaquine should be added is unknown. We aimed to compare effectiveness of four fixed-dose ACTs and a loose tablet combination of artesunate and mefloquine and assess the addition of a single gametocytocidal dose of primaquine.

The addition of a single dose of primaquine (0,75mg/kg) reduced P falciparum gametocyte carriage substantially: rate ratio 11,9(95% CI 7,4 – 20,5). All regimens were well tolerated. Adverse events were reported by 599 patients, most commonly vomiting and dizziness. Other side-effects were less common and were not related to a specific treatment.

Artesunate-amodiaquine should not be used in myanmar, because the other ACTs are substantially

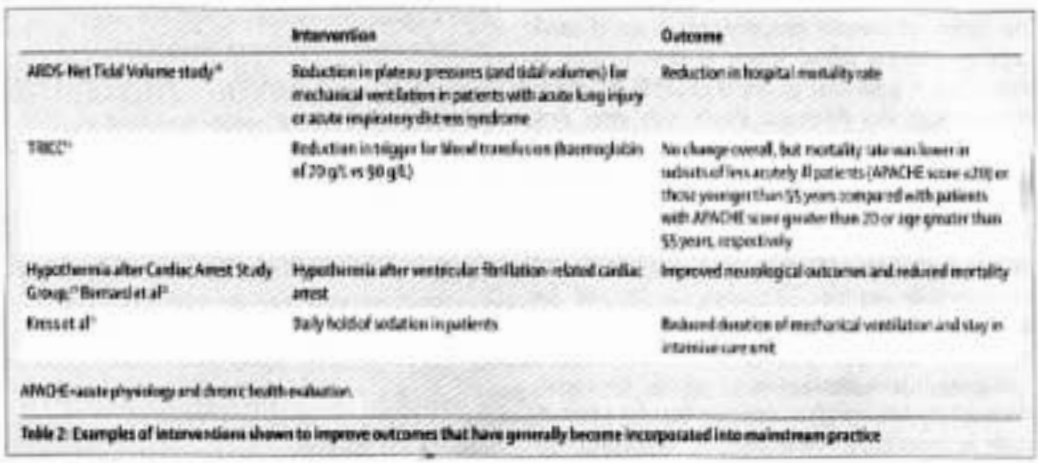
more effective. Artesunate-mefloquine provided the greatest post-treatment suppression of malaria. Adding a single-dose of primaquine would substantially reduce transmission potential. Vivax malaria, not recurrent falciparum malaria, is the main complication after treatment of P falciparum infections in this region.

Critical care and the global burden of critical illness in adults
Neill K J Adhikari
Lancet 2010, 375: 1339-46
Critical care has evolved from treatment of poliomyelitis victims with respiratory failure in an intesive care unit to treatment of severely ill patients irrespective of location or specific technology. Population-based studies in the developed world suggest that the burden of critical illness is higher than generaly appreciated and will increase as the population ages.

Table 2: **Availability of intensive care resources by country**

	Number of ICUs	Number of ICU beds per 100 hospital beds	Number of ICU beds per 100 000 population
USA	5980	9.0	20.0
Belgium	135	4.4	21.9
South Africa		8.9	1.7
Zambia		0.2	

Critical care: advances and future perspectives
Jean-Louis Vincent
Lancet 2010, 376: 1354-61
The results of many multicentre studies have not lent support to, or have even confounded, expectations, drawing attention to several issues related to patient heterogeneity, trial design and elucidation of underlying pathophysiological processes. However, these results have generated constructive introspection and reappraisal of treatments and management strategies that have benefited the patient. In addition to the medical, financial and logistical challenges in the future, exciting opportunities will arise as new developments in diagnostic tests, therapeutic interventions and technology are used to exploit an increasing awareness of how critical illness should be managed.



	Intervention	Outcome
ARDS Net Tidal Volume study[4]	Reduction in plateau pressures (and tidal volumes) for mechanical ventilation in patients with acute lung injury or acute respiratory distress syndrome	Reduction in hospital mortality rate
TRICC[5]	Reduction in trigger for blood transfusion (haemoglobin of 70 g/L vs 90 g/L)	No change overall, but mortality rate was lower in subsets of less acutely ill patients (APACHE score <30) or those younger than 55 years compared with patients with APACHE score greater than 20 or age greater than 55 years, respectively
Hypothermia after Cardiac Arrest Study Group,[6] Bernard et al[7]	Hypothermia after ventricular fibrillation-related cardiac arrest	Improved neurological outcomes and reduced mortality
Kress et al[8]	Daily hold of sedation in patients	Reduced duration of mechanical ventilation and stay in intensive care unit

APACHE=acute physiology and chronic health evaluation.

Table 2: Examples of interventions shown to improve outcomes that have generally become incorporated into mainstream practice

	Intervention	Outcome
De Smet et al,[9] de Jonge et al[10]	Selective gut decontamination	Reduction in 28-day, intensive care unit, and hospital mortality rates
Kreymann et al[11] Turgeon et al[12] Laupland et al[13]	Immunoglobulins for patients with severe sepsis	Reduction in mortality rate
PROWESS[14]	Drotrecogin alfa (activated protein C) for severe sepsis	Reduction in 28-day mortality rate
Pontes-Arruda et al[15]	Diet enriched with eicosapentaenoic acid, γ-linolenic acid in mechanically ventilated patients with acute lung injury or acute respiratory distress syndrome	Reduction in mortality rate, time spent in an intensive care unit, and duration of mechanical ventilation
Gutierrez et al[16]	Use of gastric tonometric measurement of gastric mucosal pH to titrate fluid and inotrope therapy	Improved hospital survival in a subset of patients with normal gastric mucosal pH on admission to intensive care unit

Table 3: Examples of interventions shown to improve outcomes in randomised, controlled trials (or meta-analyses) but have not become routinely incorporated into standard practice

Comparison of the sales of veterinary antibacterial agents between 10 European countries
Kari Grave
J Antimicrob Chemother 2010, 65: 2037-2040

The usage, as expressed in mg antibacterial drugs sold/kg biomass of slaughtered pigs, poultry and cattle and of (live) dairy cattle, varied from 18 to 188 mg/kg. The relative proportion of the various classes of antibacterial agents sold varied considerably.

The apparent wide variations in the usage of veterinary antimicrobial agents between countries cannot be explained by differences in the animal species demographics alone. Further in-depth analyses are required to identify the factors underlying the observed differences.

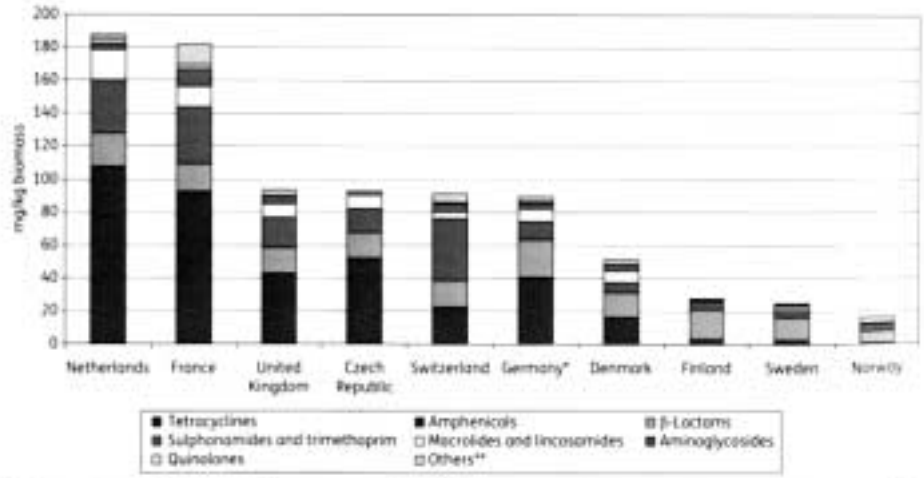


Figure 1. Amounts, in mg, of veterinary antibacterial agents sold in 2007 per kg biomass of pig meat, poultry meat and cattle meat produced plus estimated live weight of dairy cattle. *2005 data. **The substances included vary from country to country.

Emergence of linezolid-resistant coagulase-negative Staphylococcus in a cancer centre linked to increased linezolid utilization
Victor E. Mulanovich
J Antimicrob Chemother 2010, 65: 2001-2004
The prevalence of linezolid-resistant coagulase-negative Staphylococcus (CoNS) in the MD Anderson Cancer Center rose from 0.6% in 2007 to 5.5% in 2009. The aim of our study was to analyse the relationship between linezolid use and an outbreak of linezolid-resistant CoNS.
We retrospectively identified 27 infection or colonization events. Increased linezolid utilization preceded the appearance of a linezolid-resistant CoNS clone.

Fosfomycin versus other antibiotics for the treatment of cystitis: a meta-analysis of randomized controlled trials
Matthew E. Falagas
J Antimicrob Chemother 2010, 65: 1862-1877
To evaluate the effectiveness and safety of fosfomycin compared with other antibiotics for the treatment of patients with cystitis.
Regarding clinical success, no difference was found in the comprehensive analysis regarding all comparators combined (10 RCTs, 1657 patients, risk ratio (RR)=1.00,95% confidence interval (CI)=0.98-1.03) in trials involving non-pregnant females and in trials involving mixed populations. Insufficient relevant data were provided from trials involving paediatric and pregnant patients. No difference between fosfomycin and comparators was also found in all comparisons regarding the remaining effectiveness outcomes (namely microbiological success/relapse/re-infection). Fosfomycin had a comparable safety profile with the evaluated comparators in non-pregnant women, mixed and paediatric populations, whereas it was associated with significantly fewer adverse events in pregnant women (4 RCTs, 507 patients, RR=0.35,95% CI=0.12-0.97).
In the era of high drug resistance rates, reported even among community-acquired uropathogens, fosfomycin may provide a valuable alternative option for the treatment of cystitis in non-pregnant and pregnant women and in elderly and paediatric patients.

Akira Watanabe. Long Acting Neuraminidase Inhibitor Laninamivir Octanoate versus Oseltamivir for Treatment of Influenza: A Double Blind, Randomized, Noninferiority Clinical Trial. Clinical Infectious Diseases 2010;51:1167–1175
A single inhalation of laninamivir octanoate is effective for the treatment of seasonal influenza, including that caused by oseltamivir resistant virus, in adults.

Susan J. Rehm, Alan Tice. *Staphylococcus aureus:* Methicillin Susceptible *S. aureus* to Methicillin Resistant *S. aureus* and Vancomycin Resistant *S. aureus.* Clinical Infectious Diseases 2010;51:S176–S182
Heterogeneous vancomycin-intermediate *S. aureus* (hVISA), defined as organisms with minimal inhibitory concentrations (MICs) of 1–2 μg/mL (but with a subpopulation of daughter cells with the ability to grow at 4 μg/mL), appears to precede the development of vancomycin-intermediate *S. aureus* (VISA), with MICs of 4–8 μg/mL. Finally, VRSA is defined as organisms with MICs 16 mg/mL. Since the first documented clinical infection due to hVISA was reported in Japan (in a patient with MRSA pneumonia unresponsive to vancomycin), VISA infections have been reported in patients from the United States, Europe, and Asia. The first documented infection caused by VRSA in the United States was reported by the Michigan Department of Community Health in 2002. Since then, 8 additional cases have been confirmed by the CDC (1 case each from Pennsylvania and New York and 6 from Michigan).

Mobeen H. Rathore. The Unique Issues of Outpatient Parenteral Antimicrobial Therapy in Children and Adolescents. Clinical Infectious Diseases 2010;51:S209–S215
The psychological disadvantage of hospitalization in children, compared with adults, is great, and both populations are equally vulnerable to nosocomial infection, increasingly augmented by multidrug-resistant organisms.

Lawrence Eron. Telemedicine: The Future of Outpatient Therapy? Clinical Infectious Diseases 2010;51:S224–S230.
Early hospital discharge of acutely infected patients to received outpatient parenteral antimicrobial therapy has been shown to be safe and effective. However, concerns over safety, potential litigation, and anxieties of the patient and family about not receiving professional care have limited the use of this approach. Telemedicine may overcome these barriers by allowing health care providers to monitor and communicate with acutely infected patients from a remote medical center via a home computer station transmitting audio, video, and vital signs data.

Robert W Snow, Emelda A Okiro, Peter W Gething, Rifat Atun, Simon I Hay. Equity and adequacy of international donor assistance for global malaria control: an analysis of populations at risk and external funding commitments. The Lancet, Volume 376, Issue 9750, Pages 1409 - 1416, 23 October 2010
Financing for malaria control has increased as part of international commitments to achieve the Millennium Development Goals (MDGs). International financing for malaria control has increased by 166% (from $0•73 billion to $1•94 billion) since 2007 and is broadly consistent with biological needs. 21 countries have reached adequate assistance to provide a comprehensive suite of interventions by 2009, including 12 countries in Africa. However, this assistance was inadequate for 50 countries representing 61% of the worldwide population at risk of malaria. Funding for malaria control worldwide is 60% lower than the US$4•9 billion needed for comprehensive control in 2010.

Yamaguchi Y et al. J Infect Chemother. 2009 Oct;15(5):274-8. Epub 2009 Oct 24. Characterization of beta-lactam antibiotic-induced vancomycin-resistant MRSA (BIVR) in a patient with septicemia during long-term vancomycin administration.
It was reported that some methicillin-resistant Staphylococcus aureus (MRSA) show resistance to vancomycin (VCM) and beta-lactam antibiotics; thus, they are termed beta-lactam antibiotic-induced VCM-resistant MRSA (BIVR). ur results indicate the possibility that long-term VCM therapy is one of the factors that allow BIVR or VCM-low-sensitive MRSA to emerge, and this allows VCM therapy for MRSA to fail.

Paul Turner et al. Influenza in Refugees on the Thailand–Myanmar Border, May–October 2009 EID Journal Home > Volume 16, Number 9–September 2010
We describe the epidemiology of influenza virus infections in refugees in a camp in rural Southeast Asia during May–October 2009, the first 6 months after identification of pandemic (H1N1) 2009 in Thailand. A review of passive surveillance for acute respiratory infection did not show an increase in acute respiratory tract infection incidence associated with the arrival of pandemic (H1N1) 2009 in the camp.

Implication of the global increase of diabetes for tuberculosis control and patient care
Tropical Medicine and International Health, Vol. 15, No. II, pp. 1289-1299, November 2010
Rovina Ruslami
To review the current knowledge about tuberculosis (TB) and diabetes, assessing the implication of the global increase of diabetes for TB control and patient care.
The higest TB burden will be attributable to TB in 2030, a relative increase of 25,5% compared to 2010. Diabetes is associated with a higher age and body weight among patients with TB, but probably not with a specific clinical presentation of TB. Rifampicin hampers glycemic control by increasing the metabolism of most oral antidiabetic drugs, while diabetes patients may have lower concentrations of anti-TB drugs.

Bi-directional screening for tuberculosis and diabetes: a systematic review
Tropical Medicine and International Health, Vol. 15, No. II, pp. 1300-1314, November 2010
Christie Y. Jeon
Objective To assesse the yield of finding additional TB or diabetes mellitus (DM) cases through systematic screening and to determine the effectiveness of preventive TB therapy in people with DM. Screening for TB in persons with DM demonstrated that TB prevalence in this population is high, ranging from 1,7% to 36%, and increasing with rising TB prevalence in the underlying population as well as with DM severity. Screening patients with TB for DM also yielded high prevalences of DM ranging from 1,9% to 35%.

The effects of a pre-season treatment with effective antimalarials on subsequent malaria morbidity in under five-year-old children living in high and seasonal malaria transmission area of Burkina Faso
Tropical Medicine and International Health, Vol. 15, No. II, pp. 1315-1321, November 2010
Alphonse Ouédraogo
To evaluate the effects of pre-season treatment with single dose of sulfadoxine-pyrimethamine (SP) or artemether-lumefantrine (AL) on subsequent malaria morbidity in under-fives. The mean time to the first malaria infection was 36 days in the SP arm and 26 days in the AL arm (P=0.006). The incidence density of malaria infection was similar in both groups (86,5% vs. 92,3%, P=0.52). The mean time to the first malaria episodes was 47 days in the SP arm and 32 days in the AL arm (P<0.001). The incidence of malaria episodes was significantly higher in the group pretreated with AL (45.7 per 1000 child days-at-risk CI 95% (35-56) than in the control group (10.7 per 1000 child days-at-risk CI 95% (7-15), P<0.001. Our findings suggest that the radical clearance of parasitemia with AL may increase susceptibility to malaria infection and clinical malaria episodes.

Evaluation of simple laboratory investigations to predict fatal outcome in infants with severe malnutrition presenting in an Urban diarrhoea treatment centre in Bangladesh
Tropical Medicine and International Health, Vol. 15, No. II, pp. 1322-1325, November 2010
Mohammod J. Chisti
Objective To evaluate rapid and simple laboratory investigations to predict fatal outcome in infants presenting with diarrhoea and severe malnutrition.
Method Retrospective chart analysis of infants with severe malnutrition and diarrhoea with (cases) and without fatal outcome (controls) admitted to the Special Care Ward in Dhaka Hospital at ICDDR,B between May 2005 and April 2006. All infants ($n = 61$) who underwent bedside blood glucose, full peripheral blood count, serum C-reactive protein (CRP), and serum electrolyte tests were included.
Results In logistic regression analyses, after adjusting for all available potential confounders

(abnormal WBC count, higher CRP level, hyponatraemia, hypokalaemia, hypocalcaemia, and hypomagnesaemia), cases (n = 10) were significantly associated only with hypoglycaemia (measured using a portable bedside finger blood glucose test) (odds ratio 5.0, CI 1.1–23.0, P = 0.039) on admission.
Conclusion A simple rapid bedside glucose test may be used to predict the outcome of diarrhoeal infants presenting with severe malnutrition.

Migration and immunization: determinants of childhood immunization uptake among socio-economically disadvantaged migrants in Delhi, India
Tropical Medicine and International Health, Vol. 15, No. II, pp. 1326-1332, November 2010
Yadlapalli S. Kusuma
Immunization coverage rates were lower among migrants than the general population of Delhi and even lower among recent migrants. The likelihood of a child receiving full immunization rose with age of the mother, her educational attainment and the frequency of her use of health care. The head of household having a secured salaried job also significantly increased the likelihood of full immunization as did post-natal visits by a health worker. Migrant status favours low immunization uptake particularly in the vulnerability context of alienation and livelihood insecurity. Services must be delivered with a focus on recent migrants.

High failure rate of the dissolution tests for 500-mg amoxicillin capsules sold in Cambodia: is it because of the product or the test method?
Tropical Medicine and International Health, Vol. 15, No. II, pp. 1340-1346, November 2010
J. Okomura
During the survey of substandard medicines in Cambodia in 2007, it was found that more than 90% of 500-mg amoxicillin (AMPC) capsules failed the United States Pharmacopeia (USP) 30 TEST 1 dissolution test. All 500-mg AMPC capsules used for the comparison passed the quantitative test. Samples that passed the USP 28 and USP 30 TEST 2 dissolution tests were identical and the pass rate was 97,1% (34/35), whereas the pass rate with the USP 30 TEST 1 was 8,6% (3/35). The difference in the dissolution results between the three methods was significant (P<0.0001).

Cryptococcal meningitis in HIV-infected patients: a longitudinal study in Cambodia
Tropical Medicine and International Health, Vol. 15, No. II, pp. 1375-1381, November 2010
Emmanuelle Espié
Conclusions Cryptococcal meningitis remains an important cause of morbidity and mortality in Cambodian HIV-infected patients. Our findings highlight the importance of increasing early Access to HIV care and cryptococcal meningitis prophylaxis and of improving its diagnosis in resource-limited settings.

ASTMH MEETING REPORT (2010)

V. Krcmery, J. Benca

St. Elisabeth University College Bratislava
St. Max Kolbes Childrens Tropical Programme, Phnom Penh, Cambodia

A. NEONATAL INFECTIONS – ASTMH Atlanta meeting

1) Introduction

Floods in Pakistan – 21 mil people affected ar displaced
Human consequence – Hunger, malnutrition, Homelessness, cholera, polio (101 cases)
Nationwide dengue outbreak 170 cases in labore
4 million members die every year: Pakistan, Afghanistan, India, Ethiopia, Somalia, Angola, Mali, Chad, CEA, Papua, Niger – 90% of all neonatal death
42% of all < 5 deaths are neonatal. In SEA about 18% neonatal death – infections,
BMJ 2000 57-56/1000 – no changes in mortality within last 10-20 years
Even nosocomial ID are 20x high and resistance is also high in Pakistan, India also MRSA changes
OBS –early onset of sepsis - ..BS, Enterobacteriaceae

2) Strategies

1. basaline strategies against sepsis
2. chlorhexidine - antiseptic to control after sepsis
3. vaccination in neonates /polio, TB/ plus maternal immunisation
4. antibiotic therapy for neonates sepsis (AMP CTRX, better than or AMP+AGL- worse)
5. case fataly rate 10% in stilled birth do not have still birth
6. Refusal of hospitalisation – pear + cach of pinuces

B) MALARIA RESISTANCE

a. Myanmar, Bangladesh, Thailand, Cambodia – no incidance of artesunat (in monotherapy) i.v – no resistance!
   Artesunate 2mg/kg vs. 4 mg/kg vs (Quinine + 30mg/kg/d + DOXY 4mg/kg/d)
b. MMWR, nov. 5 2010, 59, 43

C) TRAVEL MEDICINE – PROPHYLAXIS OR MALARIA

Individual risk reduction 1. Repellents – DEET, Picardin
2. Profylaxis

In P. vivax - Primaquine (G- 6- PDH cave)
In P. falciparum – In C-sensitive malaria – Chloroquine
In C-resistant malaria – Dox, Mefloquine
In M-resistant malaria – AS or doxycycline
3. Notable changes in guidelines
Iraq, Mexico, Costa Rica

Travelers health Update from CDC Atlanta
Travel vaccines update – CDC Yellow book, WHO Green book in 2010

1) Jap. Encephalitis 12.3.2010 – Japanesse encephalitis for travelers staying in tourism … for more than 1 month, or outbreak, imensing activity not for those staying in urban areas and those stay less than 1 month
2) Rabies – add 5th dose on day 28 (1(0),3,7,14,28)

3) Yellow fever – immuno tx, tymus diseases, not in age > 60
- systhemic HIV < 200 mm 3 do not vaccinate
- changes of list clasiffication countries, new maps published will be in jan 2011
- upcoming 2012 yellow book

Migration and TBC
Air travel to the USA – Major problem TB (… or negative)
Refuges 70 000, immigrants 1 000 000, visistors 127 mil + 36 mil. Ling VISA (China, Vietnam, Air travel)
Respiratory – top 5- B, Iraq, Bhutan, Iran, Cuba, Somalia
Cases of death 5-12 mil.- Respiratory infect, 300/100 000 persons in most Africa countries , in US < 10/100 000 persons
Immigrants and TB –Thai, Malaysia, Mexico

D) ARTEMISININ COMBINATION THERAPIES

ACT + RDT (Rapid diagnostic Tests) in Malaria
Access – targeting – safety- qualify of antimalarials – ACTs
Problem 1 massivediagnosis and treatment of malaria .. led to resistance to artemisinine (ACT) used in combination.
Sensitivity of microscopy near 75% specifity 37,5%
In microscopy setting – RDT had not effect, in clinical setting , RDT
Malaria in Afganistan of falciparum plus of vivax of fever = malaria in Afganistan
High inciduce of false positive of both sides. (A 16 positive, 4 had…)
Positive RDT does not vule out bacterial infections apart of clinical /lab malaria
Positive RDT does mean malaria plus sepsis is possible
To give ACT to those who have RDT positive test. Because: positive predictive value rate 75%, negative predictive value 100%
Proof: Study or safety of resistancy ACT's do those recived RDT only
PPV 86, NPV 90%, SP 98%, SEW 97%
Pneumonia was in 50% positive RTG negat. and in 37% in RDT positive children

E) PARASITOLOGY – HELMINTOLOGY

E1) Helmints and allergy

(atopic allergy, eczema, asthma)
In early childhood – about 2 .. infected – gut worms are commonest, followed by schistosoma
1) atopy – allergic sensitization, allergic rhinitis, food allergy – associated with atopy
Studies showed less allergy
1. 1993 V.., decreasing in Caracas, reduced asthma activity
2. 1996 Gabon, mebendazole, 30 months. Decrease of skin reactivity
3. 1999 Nigeria, albendazole – single dose - noeffect
4. 2002 Vietnam – hookworm infection 60%, mebendazole – albendazole 400mg/3 doses – increase of the risk of skin trst reactivity
5. 2009 Equat., observation study, not sufficient effect

In some effect of decreasing allergy control (positive skin tests)
2) worms and asthma?
Asthma is a complex interaction between genes and enviroment. 16 studies shoved associations between worms and asthma. Ascaris or hookworm

3) Worms an eczema
   8 studies, most ascaris and trichiuris – 3 x reduce risk
4) worms and rhinitis – 6 hookworm infection – all 6 showed no effect

E2) Helminths and HIV – co infections

Kenya in 2008 under 5, mortality 92/1000 – n… in 1993. Fundins is 20x higher – 1,7 mil USD but no! effect on under 5 mortality! Now 31% are recovery HAART
HAART package – THP/SMX, INH, micronutrition
Acyclovir, Bednets, Water Filter
About 2 bil people have worms: map between HIV and helmints is analogous
Treatment of helmint coinfections – does de- worming has effect in HIV pts but tx?
Albendazole vs. placebo (3d), 60% hookworm, 30% ascaris spp, 25% schistosomas
There was highly significant improvement of CD4 cells in those who had deworming use Albendazole
What about the others: Varias in Renicus.
Decreasing in HIV: All 3 studies showed protective effect of decreasing to viral load (reduction of viral load) but no effect on CD4 cells.
Opened question: Coinfection and IPT in malaria? TBC/HIV relationship
Deworming in women/children showed clear protective effect of decreasing of malnutrition, and (anemia in pregnant women and children)

F) CYSTICERCOSIS

India: 2/100 000, neurocysticercosis presented as epidemiology up to 4/1000
CT scans: 30% calcifications in the CNS within people with neurocysticercosis + epidemiology (India)
China, Malaysia 1-3% prevalence.
Risk factors: pig rearing
Peru experience + Tanzania experience
Peru, Garda, Lima
– In EU, cysticercosis was eradicated
– Serology was not presented to act
– Viseral cysticercosis
– ivermectin doctors + technicians (Kongo, Garda, Lima, UN, Peru),
– To vaccine pigs
– Children education
– How to cook
– Pig treatment – veterinary
– To the pigs from feces
– To poverty;
– Mass PEQ chemotherapy 1997 in Ecuador, not sustainable
– Vaccine in EU
– Oxfendazol, Miclosamid 3x
– Pig replacement (after treatment)
– Pig vaccination 2x
– Cholera vaccine

Surgery in ID
– Against of Cysticercosis
  1) Aspergillosis - Lung

2) Echinococosis - GIT
3) Cysticercosis – neurocysticercosis
4) Echinocystis – Carotic

Neurocysticercosis in neurologic syndrome (asymptomatic) 0.1 – 2.5!!! in children vs. In adults in neurocytis.

Within last 30 years in Mexico eradicated (also because of notifications) reasons:

1) Research/communications
2) Education/cooking
3) Guidelines – Praziquantel 10 mg/kg to all pigs, ministry of Health
4) Improving the life in Mexico (socioeconomic improvement)
5) Pigs strong inspection (veterinary) Mexico

G) SCHISTOSOMIASIS (SCORE study)

Eliminated in Zanzibar, Schistosoma mansoni

First "point of care" fest CCA (Circulating antigen)

Other: Kato-Katz sensitivity, high Eliza – Ab test (great sensitivity) Wet not good for acute infection).

Diarrhoea: S. Mansoni

Manifestations:

- Schistosoma mansoni
- Both
- Schistosoma haematobium

Katayama fever + urinal discase both (20% tests are missing infected patients)

Coinfection: Soil transmitted helmints, malaria, HIV, filariosis etc.

References:

1. Book of Abstracts and lectures. ASTMH Anual Meeting Atlanta 2-6.11.2010. 1246 pp.