Parasite Immunol. 2006 Oct;28(10):507-13

Helminthes could influence the outcome of vaccines against TB in the tropics.

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Helminthes, infections widespread in the tropics, are known to elicit a wide range of immunomodulation characterized by dominant Th2 type immune responses, chronic immune activation as well as up-regulated regulatory T cell activity. Such a wide range of immunomodulation caused by helminthes may have an impact on the host's ability to cope with subsequent infections and/or may affect the efficacy of vaccination. Indeed studies conducted in humans living in helminth-endemic areas and in animal models showed that helminth infection makes the host more permissive to mycobacterial infections and less able to benefit from vaccination. These observations have fundamental practical consequences if confirmed by large and appropriately controlled clinical studies. Eradication of worms could offer an affordable, simple and novel means to reduce the burden of the tuberculosis problem that at the moment seems to be getting out of control in sub-Saharan Africa. This information would also be of great relevance in the design of vaccines against diseases of major public health importance, including malaria and HIV/AIDS.

Tanzan Health Res Bull. 2005 Sep;7(3):179-84. Links

Burden of diseases in poor resource countries: meeting the challenges of combating HIV/AIDS, tuberculosis and malaria.

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Poverty, ill health and ignorance are closely interlinked and each is a determinant of the other. HIV/AIDS, malaria and

tuberculosis are by far the commonest causes of ill-health and death in the poorest countries of the world which happen to be in the tropics and temperate countries in Africa, Asia and South America. Morbidity and mortality from these three diseases have a major socio-economic impact on individuals, communities and nations, due to the vicious cycle of poverty, ill health and ignorance. In Tanzania morbidity due to HIV/AIDS, tuberculosis and malaria leads to irrecoverable losses in productivity, inadequately trained workforce due to absence from training by the sick, heavy health care budgets to treat these otherwise preventable diseases, less competitive economy, higher labour force turnovers and unstable national budgets. If not controlled continuing rise in incidence of HIV/AIDS, malaria and TB may threaten the survival of small enterprises and ability to attract foreign investments leading to a rise in unemployment. Thus, investments in the improvement of health including HIV/AIDS, malaria and TB if done well will bring substantial benefits for the national economy including an increase in productivity. In this paper a review of the impact of HIV/AIDS, TB and malaria in Tanzania is done with an attempt to propose how research can contribute to improved efforts towards more effective prevention and control efforts. The need for multidisplinary research efforts in addressing the three disease conditions is proposed

Med Hypotheses. 2007;68(1):151-7. Epub 2006 Aug 8. ELSEVIER FULL-TEXT ARTICLE Links

AIDS: Caused by development of resistance to drugs in a non-target intracellular parasite.

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The origin of acquired immune disorder syndrome (AIDS) has been the subject of substantial controversy both in the scientific community and in the popular press. The debate involves the mode of transmission of a simian virus (SIV) to humans. Both major camps in the argument presume that humans are normally free of such viruses and assume that once the simian virus was transmitted, it immediately infected some T-cells and caused the release of toxic agents that killed off bystander (uninfected) T-cells

resulting in AIDS. The evolution of the Simian virus (SIV) into a human virus (HIV) is regarded as an artifact. In contrast, a fundamentally different hypothesis has been proposed [Parris GE. Med Hypotheses 2004;62(3):354-7] in which it is presumed that in hyper-endemic areas of malaria (central Africa), all primates (humans and non-human primates) have shared a retrovirus that augments their T-cell response to the malaria parasite. The virus can be called "primate T-cell retrovirus" (PTRV). Over thousands of years the virus has crossed species lines many times (with little effect) and typically adapts to the host quickly. In this model, AIDS is seen to be the result of the development of resistance of the virus (PTRV) to continuous exposure to pro-apoptotic (schizonticidal) aminoquinoline drugs used to prevent malaria. The hypothesis was originally proposed based on biochemical activities of the aminoquinolines (e.g., pamaquine (plasmoquine(TM)), primaquine and chloroquine), but recent publications demonstrated that some of these drugs definitely adversely affect HIV and other viruses and logically would cause them to evolve resistance. Review of the timeline that has been created for the evolution of HIV in humans is also shown to be qualitatively and quantitatively consistent with this hypothesis (and not with either version of the conventional hypothesis). SARS and Ebola also fit this pattern.

J Clin Microbiol. 2006 Aug;44(8):3021-

False-positive results of enzyme immunoassays for human immunodeficiency virus in patients with uncomplicated malaria.

- **Gasasira AF**,
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- **Havlir D**,
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Malaria may impact upon human immunodeficiency virus (HIV) test results. We evaluated two HIV enzyme immunoassays (EIAs) by testing 1,965 Ugandans with malaria. We found poor positive predictive values (53% and 76%), particularly with younger age. Combining EIAs eliminated false positives but missed 21% of true positives. Performance of HIV EIAs in malaria may be unsatisfactory.

Trop Doct. 2006 Jul;36(3):132-6

Exemption policies and community preferences for tropical endemic diseases in the Bamako initiative programme in Nigeria.

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We determined the actual written policies/guidelines and practices of fee exemptions aimed at the primary health-care level for tropical diseases treatment within the Bamako initiative system and the community's and decision makers' preferences for exemption in Nigeria. Health policy documents from the federal and state ministries of health were reviewed to determine the guidelines for exemptions, services, goods and category of people to receive exemptions. The records of the local government areas, health centres and community health committees were also reviewed to check who had received exemptions and modalities for doing so. In addition, household surveys using questionnaires was conducted.There is no clear-cut national policy regarding exemption. In areas where exemption exists, these are largely unofficial, as no official documents exist to support exemption. A total of 1594 individuals were surveyed. Community members prefer pregnant women, children and patients with TB, malaria, onchocerciasis and leprosy to be exempted from payment of fees: decision makers prefer the poor, children and patients with malaria, TB and leprosy to be exempted from payment for drugs, registration, consultation and preventive services such as immunization and antenatal services. One area of divergence between the preferences of the community and decision makers is the issue of exempting people with malaria and HIV/AIDS.

Trop Doct. 2006 Jul;36(3):129-31

Increase in hospital mortality from non-communicable disease and HIV-related conditions in Bulawayo, Zimbabwe, between 1992 and 2000.

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The HIV/AIDS pandemic is creating a strain on health care services in the developing world, with knock-on consequences for HIV negative patients. We looked for possible changes over time in the patterns of illness and outcomes of admission to an adult medical unit in Zimbabwe. We performed a prospective descriptive study of discharge diagnoses and causes of in-hospital ;mortality for all medical patients under the care of one consultant at Mpilo Central Hospital, Bulawayo, Zimbabwe. Two similar 7-month periods were compared in 1992 and 2000. Data recorded included: initials, sex, alive or dead status, diagnosis and HIV/AIDS status. Similar numbers of patients were admitted in 1992 and 2000 (1305 and 1369), but in-hospital mortality increased from 13.3% to 28.6% ($P < 0.001$), especially in male patients (13.1% to 33.9% $P < 0.001$). Mortality rates increased for both infectious and non-communicable diseases such as cardiac failure, stroke and diabetes. The 10 most common diagnoses were similar, apart from Pneumocystis carinii pneumonia (PCP) cases, which increased from 18 to 90. The proportion of patients clinically or serologically positive for HIV/AIDS rose from 13.9% to 51.1% ($P < 0.001$), but the number of cases of the HIV wasting syndrome (SLIM)/chronic gastroenteritis did not change significantly. In 1992 there happened to be a large number of cases of malaria transmission. Mortality related to both communicable and non-communicable diseases increased, confirming that HIV negative patients are also being affected by the strain on health services. Although based on clinical and radiological diagnosis, PCP pneumonia appears to be increasingly common in this area.

Malar J. 2006 Jul 31;5:65

From chloroquine to artemisinin-based combination therapy: the Sudanese experience.

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BACKGROUND: In Sudan, chloroquine (CQ) remains the most frequently used drug for falciparum malaria for more than 40 years. The change to artemisinin-based combination therapy (ACT) was initiated in 2004 using the co-blister of artesunate + sulfadoxine/pyrimethamine (AS+SP) and artemether + lumefantrine (ART+LUM), as first- and second-line, respectively. This article describes the evidence-base, the process for policy change and it reflects the experience of one year implementation. Relevant published and unpublished documents were reviewed. Data and information obtained were compiled into a structured format. CASE DESCRIPTION: Sudan has used evidence to update its malaria treatment to ACTs. The country moved without interim period and proceeded with country-wide implementation instead of a phased introduction of the new policy. The involvement of care providers and key stakeholders in a form of a technical advisory committee is considered the key issue in the process. Development and distribution of guidelines, training of care providers, communication to the public and provision of drugs were given great consideration. To ensure presence of high quality drugs, a system for post-marketing drugs surveillance was established. Currently, ACTs are chargeable and chiefly available in urban areas. With the input from the Global Fund to fight AIDs, Tuberculosis and Malaria, AS+SP is now available free of charge in 10 states. CONCLUSION: Implementation of the new policy is affected by the limited availability of the drugs, their high cost and limited pre-qualified manufacturers. Substantial funding needs to be mobilized by all partners to increase patients' access for this life-saving intervention.

PMID: 16879742 [PubMed - indexed for MEDLINE]

Cell Cycle. 2006 Aug;5(15):1642-8. Epub 2006 Aug 1.

S Afr Med J. 2006 Jun;96(6):526-9

Impact of opportunistic diseases on chronic mortality in HIV-infected adults in Cote d'Ivoire.

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OBJECTIVE: To estimate incidence rates of opportunistic diseases (ODs) and mortality for patients with and without a history of OD among HIV-infected patients in Cote d'Ivoire. METHODS: Using incidence density analysis, we estimated rates of ODs and chronic mortality by CD4 count in patients in a cotrimoxazole prophylaxis trial in Abidjan before the highly active antiretroviral therapy (HAART) era. Chronic mortality was defined as death without a history of OD or death more than 30 days after an OD diagnosis. We used Poisson's regression to examine the effect of OD history on chronic mortality after adjusting for age, gender, and current CD4 count. RESULTS: Two hundred and seventy patients (40% male, mean age 33 years, median baseline CD4 count 261 cells/microl) were followed up for a median of 9.5 months. Bacterial infections and tuberculosis were the most common severe ODs. Of 47 patients who died, 9 (19%) died within 30 days of an OD, 26 (55%) died more than 30 days after an OD, and 12 (26%) died with no OD history. The chronic mortality

rate was 31.0/100 person-years for those with an OD history, and 11.1/100 person-years for those with no OD history (rate ratio (RR) 2.81, 95% confidence interval (CI): 1.43 - 5.54). Multivariate analysis revealed that OD history remained an independent predictor of mortality (RR 2.15, 95% CI: 1.07 - 4.33) after adjusting for CD4 count, age and gender. CONCLUSIONS: Before the HAART era, a history of OD was associated with increased chronic HIV mortality in Cote d'Ivoire, even after adjusting for CD4 count. These results provide further evidence supporting OD prophylaxis in HIV-infected patients.

Med Trop (Mars). 2006 Apr;66(2):167-71

[Opportunistic diseases in HIV-infected patients at the Jeanne Ebori Foundation in Libreville, Gabon]

[Article in French]

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The purpose of this study was to determine the frequencies of opportunistic diseases among AIDS patients at the Jeanne Ebori Foundation (JEF) in Libreville, Gabon. A total 6313 file of patients treated in the internal medicine unit between 1994 and 1998 were analyzed. Findings showed that the main diseases related to AIDS classified according to seroprevalence were as follows: purigo (100%), cerebral toxoplasmosis (100%), oral candidiaisis (88%), bacteremia (87.8%), shingles (84.6%), minor salmonelosis (72%), and tuberclosis. The main diagnoses unrelated to AIDS at the JEF according to seroprevalene were typhoid (9.4%), common pneumonia (28%), bacterial meningitis (26.3%, hepatitis B (20.0%), and malaria (14%). In addition to these diseases there were nine cases of Kaposi's sarcoma, four cases of isosporosis, two cases of cryptococcosis, two cases of herpes Varicella, one case of cryptosporidiosis, and one case of isosporosis. The incidence of opportunistic disease was high in our study and must be taken in drug procurement.

Adv Parasitol. 2006;61:1-45

Control of human parasitic diseases: Context and overview.

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The control of parasitic diseases of humans has been undertaken since the aetiology and natural history of the infections was recognized and the deleterious effects on human health and well-being appreciated by policy makers, medical practitioners and public health specialists. However, while some parasitic infections such as malaria have proved difficult to control, as defined by a sustained reduction in incidence, others, particularly helminth infections can be effectively controlled. The different approaches to control from diagnosis, to treatment and cure of the clinically sick patient, to control the transmission within the community by preventative chemotherapy and vector control are outlined. The concepts of eradication, elimination and control are defined and examples of success summarized. Overviews of the health policy and financing environment in which programmes to control or eliminate parasitic diseases are positioned and the development of public-private partnerships as vehicles for product development or access to drugs for parasite disease control are discussed. Failure to sustain control of parasites may be due to development of drug resistance or the failure to implement proven strategies as a result of decreased resources within the health system, decentralization of health management through health-sector reform and the lack of financial and human resources in settings where per capita government expenditure on health may be less than $US 5 per year. However, success has been achieved in several large-scale programmes through sustained national government investment and/or committed donor support. It is also widely accepted that the level of investment in drug development for the parasitic diseases of poor populations is an unattractive option for pharmaceutical companies. The development of partnerships to specifically address this need provides some hope that the intractable problems of the treatment regimens for the trypanosomiases and leishmaniases can be solved in the not too distant future. However, it will be difficult to implement and sustain such interventions in fragile health services often in settings where resources are limited but also in unstable, conflict-affected or

post-conflict countries. Emphasis is placed on the importance of co-endemicity and polyparasitism and the opportunity to control parasites susceptible to cost-effective and proven chemotherapeutic interventions for a package of diseases which can be implemented at low cost and which would benefit the poorest and most marginalized groups. The ecology of parasitic diseases is discussed in the context of changing ecology, environment, sociopolitical developments and climate change. These drivers of global change will affect the epidemiology of parasites over the coming decades, while in many of the most endemic and impoverished countries parasitic infections will be accorded lower priority as resourced stressed health systems cope with the burden of the higher-profile killing diseases viz., HIV/AIDS, TB and malaria. There is a need for more holistic thinking about the interactions between parasites and other infections. It is clear that as the prevalence and awareness of HIV has increased, there is a growing recognition of a host of complex interactions that determine disease outcome in individual patients. The competition for resources in the health as well as other social sectors will be a continuing challenge; effective parasite control will be dependent on how such resources are accessed and deployed to effectively address well-defined problems some of which are readily amenable to successful interventions with proven methods. In the health sector, the problems of the HIV/AIDS and TB pandemics and the problem of the emerging burden of chronic non-communicable diseases will be significant competitors for these limited resources as parasitic infections aside from malaria tend to be chronic disabling problems of the poorest who have limited access to scarce health services and are representative of the poorest quintile. Prioritization and advocacy for parasite control in the national and international political environments is the challenge.

Niger J Med. 2006 Jan-Mar;15(1):52-5. Links

Some haematological parameters in plasmodial parasitized HIV-infected Nigerians.

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BACKGROUND: Nigeria is highly burdened by malaria and HIV-infection, yet researchers know little about the impact of this co-infection on the haematological profile of HIV-infected adult Nigerians. This case control study is an attempt to investigate the effect that HIV/malaria co-infection has on some haematological parameters of HIV-infected Nigerians. METHODS: Complete blood count (CBC) of 30 plasmodium parasitized HIV-infected subjects and 70 non-parasitized controls were studied. RESULTS: Of the 30 parasitized subjects, 28 (93.3%) were positive for falciparum malaria and 2 (6.7%) for vivax malaria. The incidence of anaemia, thrombocytopenia, neutropenia and leucopenia were significantly higher in parasitized subjects compared to non-parasitized controls 66.7%, 60%, 36.7% and 63.3% versus 32.9%, 42.9%, 24.3% and 24.3% respectively. A statistically significant difference was observed between the haemoglobin, platelet count and the erythrocyte sedimentation rate (ESR) of parasitized and non-parasitized individuals ($p < 0.05$) respectively. A significant positive correlation was observed between the level of parasitaemia and anaemia ($r = 0.37$, $p < 0.04$) in parasitized subjects. The incidence of anaemia was two times higher in parasitized subjects compared to non-parasitized controls (66.7% versus 32.9%). Red cell morphology showed a normocytic and normochromic picture in 40% and 67.1% of parasitized and non- parasitized individuals respectively. Microcytic, hypochromic picture was observed in 60% and 23% respectively in parasitized and non- parasitized individuals. Striking eosinophilia was seen in 5 (16.7%) of parasitized and 3 (4.3%) of non-parasitized individuals. CONCLUSION: Incidence of cytopenia appear significantly higher in parasitized subjects compared to non-parasitized control and bring to bare the need for regular anti-malaria prophylaxis for HIV-infected patients particularly in Nigeria.

Southeast Asian J Trop Med Public Health. 2005;36 Suppl 4:50-9

Parasitic infections in Malaysia: changing and challenges.

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- **Lim YA**,
- **Jamaiah I**,
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- **Amyliana K**,
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A total of 1,885 blood and stool samples of four main protozoan parasitic infections were retrospectively reviewed from January, 2000 to April, 2004. Eleven of the 1,350 stool samples were shown positive for Cryptosporidium and Giardia infections; one of the 5 cases was clinically diagnosed as gastrointestinal cryptosporidiosis, while 6 cases were giardiasis. In patients with giardiasis, children were among the high-risk groups, making up 66.7% of these patients. The common presenting signs and symptoms were: diarrhea (83.3%), loss of appetite (83.3%), lethargy (83.3%), fever (66.7%), nausea/vomiting (50.0%), abdominal pain (16.7%), dehydration (16.7%) and rigor and chills (16.7%). Metronidazole was the drug of choice and was given to all symptomatic patients (83.3%). For the blood samples, 28 of the 92 peripheral smears for Plasmodium spp infection were diagnosed as malaria. The age range was from 4 to 57, with a median of 32.5 years. The sex ratio (M:F) was 3.6:1, while the age group of 30-44 years was the most commonly affected in both sexes. The majority of patients were foreigners (60.7%) and non-professional (39%). Plasmodium vivax (71%) infection was the most common pathogen found in these patients, along with a history of traveling to an endemic area of malaria (31%). The predominant presenting signs and symptoms were: fever (27%), rigor and chills (24%), nausea/vomiting (15%) and headache (8%). Chloroquine and primaquine was the most common anti-malarial regimen used (78.6%) in these patients. The seroprevalence of toxoplasmosis in different groups was 258/443 (58%): seropositive for IgG 143 (32.3%); IgM 67 (15%); and IgG + IgM 48 (10.8%). The age range was from 1 to 85, with a mean of 34 (+/- SD 16.6) years. The predominant age group was 21 to 40 years (126; 28.4%). The sex ratio (M:F) was 1.2:1. Subjects were predominantly male (142; 32%) and the Malay (117; 26.4%). Of these, 32 cases were clinically diagnosed with ocular toxoplasmosis. The range of age was from 10 to 56 years with a mean of 30.5

(+/- SD 12.05) years. The sex ratio (M:F) was 1:1.7. The majority were in the age group of 21 to 40 years, female (20; 62.5%), and Malay (17; 53%). They were also single (16; 50%), unemployed (12; 37%), and resided outside Kuala Lumpur (21; 65.6%). The more common clinical presentations were blurring of vision (25; 78%), floaters (10; 31%) and pain in the eye (7; 22%). We found that funduscopic examination (100%) and seropositivity for anti-Toxoplasma antibodies (93.7%) were the main reasons for investigation. Choroidoretinitis was the most common clinical diagnosis (69%), while clindamycin was the most frequently used antimicrobial in all cases. Among HIV-infected patients, 10 cases were diagnosed as AIDS-related toxoplasmic encephalitis (TE) (9 were active and 1 had relapse TE). In addition, 1 case was confirmed as congenital toxoplasmosis.

Trop Doct. 2005 Oct;35(4):222-4. ingentaconnect Links

A survey of the use of medicinal plants and other traditional medicine in Kasese District, Uganda.

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The use and value of traditional plants and medicines is only slowly being investigated by Western medical organizations. A survey of 492 members of support groups and health-care clinics in Kasese district, Uganda was undertaken in a group setting: 23 groups with a mean size of 21, age range 4-53, which represented 0.1% of the population, covering nine of the 20 sub-counties, both in the native languages and in English, using photographs and specimens of 12 plants. Most admitted to using plants at some time-81% for self, 77% for their children; 45% admitted to using traditional healers as a source for information about health. Most plants were home grown or available locally. Medicinal plants were used for respiratory infections, fever, malaria and diarrhoea/vomiting. HIV/AIDS was rarely treated with medicinal plants.

Nihon Hansenbyo Gakkai Zasshi. 2005 Sep;74(3):185-90. Links

[JICA Leprosy Control and Basic Health Services Project in Myanmar]

[Article in Japanese]

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Japan International Cooperation Agency (JICA) implemented a 5-year long bilateral technical cooperation project, "Leprosy Control and Basic Health Services Project" in Myanmar. The project was implemented by National Leprosy Control Program, Department of Health with close technical collaboration of JICA experts mainly from International Medical Center of Japan (IMCJ) and National Sanatoriums of leprosy in Japan. It accelerated to achieve the elimination of leprosy at national level, which was declared in January 2003, and at sub-national level onward. It also developed the appropriate technologies for prevention of disability and prevention of worsening of disability (POD/POWD), which were introduced in 9 townships as a pilot service program. The Government stratified the POD/POWD services as a national program since 2005 by taking up the former pilot area to start with. The project also strengthened the function of referral system of leprosy control (Diagnosis and treatment), POD/POWD and physical rehabilitation. Beside leprosy, the project conducted a series of refresher trainings for primary health care givers, Basic Health Service Staff (BHS), of project areas (48 townships) to improve the services on tuberculosis, Malaria, Leprosy, Trachoma and HIV/AIDS for 3 years (2001-2003), which was evaluated in 2004. It contributed to improve the services at township level hospitals in procurement of audio-visual equipments and in conducting microscope training on leprosy, Malaria and tuberculosis at project areas.

Malaria attributable to the HIV-1 epidemic, sub-Saharan Africa.

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We assessed the impact of HIV-1 on malaria in the sub-Saharan African population. Relative risks for malaria in HIV-infected persons, derived from literature review, were applied to the HIV-infected population in each country, by age group, stratum of CD4 cell count, and urban versus rural residence. Distributions of CD4 counts among HIV-infected persons were modeled assuming a linear decline in CD4 after seroconversion. Averaged across 41 countries, the impact of HIV-1 was limited (although quantitatively uncertain) because of the different geographic distributions and contrasting age patterns of the 2 diseases. However, in Botswana, Zimbabwe, Swaziland, South Africa, and Namibia, the incidence of clinical malaria increased by < or =28% (95% confidence interval [CI] 14%-47%) and death increased by < or =114% (95% CI 37%-188%). These effects were due to high HIV-1 prevalence in rural areas and the locally unstable nature of malaria transmission that results in a high proportion of adult cases.

Int J Tuberc Lung Dis. 2005 Oct;9(10):1105-11

Predictors of incident tuberculosis among HIV-1-infected women in Tanzania.

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SETTING: The development of tuberculosis (TB) in HIV-1-infected individuals is associated with accelerated HIV-1 disease progression. OBJECTIVE: To examine the predictors of

incident TB in HIV-1-infected Tanzanian women. DESIGN: A prospective cohort of 1078 HIV-1-infected pregnant women was enrolled in a randomized clinical trial to examine the role of vitamin supplements in HIV-1 disease progression and fetal outcomes. RESULTS: Of 1008 women evaluated for TB, 88 (8.7%) developed TB. After controlling for age, education and hemoglobin concentration, in multivariate analysis, low CD4 cell count, elevated erythrocyte sedimentation rate (ESR), decreased mid-upper arm circumference, and high viremia were associated with an increased risk of TB. CD4 <200 vs. > or = 500 cells/mm3 was associated with a 4.44-fold increase in risk of TB (95%CI 2.10-9.40). Individuals with high viremia (> or = 50,000 copies/ml) had a 2.43-fold increase in risk of TB (95%CI 1.24-4.76). Elevated malarial parasite density was slightly associated with a 65% (95%CI 19-85) decreased risk of TB. CONCLUSIONS: The risk of developing TB was elevated among women with low CD4 cell counts, elevated ESR, coinfections with other pathogens, poor nutrition and high viremia. There is a slight inverse association between malarial infection and TB, possibly because treating malaria may reduce the risk of TB.

Scaling up health promotion interventions in the era of HIV/AIDS: challenges for a rights based approach.

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A sustained scaled up response to global public health challenges such as HIV/AIDS will require a functioning and efficient health system, based on the foundation of strong primary health care. Whilst this is necessary, it is not sufficient. Health promotion strategies need to be put into place to better engage and support families and communities in preventing disease, optimize caring, creating the demand for services and holding service providers to account. There will have to be a move away from the traditional model whereby the problem of HIV/TB/malaria is to be solved by merely increasing resources to a centralized bureaucracy that tries to increase the supply of services including health promotion messages. Development projects and programs that succeed are based on understanding of local practice and

preferences, rather than on internationally 'generalized models' of how people or villages should behave and what they should want. This paper will first briefly review different approaches to scaling up health promotion interventions, some of the key obstacles in scaling up and then suggest some possible solutions with a focus on a human rights based approach. This approach changes the emphasis from the content of the message to the characteristics of a community's organisations and institutions. Scaling up occurs as a process of association between state actors and civil society that is planned strategically and involves a sharing of experience and a strong learning process among the association partners. A human rights-based approach can facilitate such an approach through developing a common vision, delineating roles and responsibility and facilitating communication channels for the most vulnerable. But this will require health development agencies to pursue a more overt political agenda.

Med Mal Infect. 2005 Jul-Aug;35(7-8):383-9

[Epidemiological, clinical, etiological features of neuromeningeal diseases at the Fann Hospital Infectious Diseases Clinic, Dakar (Senegal)]

[Article in French]

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OBJECTIVES: This retrospective study was carried out to determine the prevalence of cerebromeningeal diseases at the Fann Teaching Hospital Infectious Diseases Clinic, in Dakar, and to describe their epidemiological, clinical, and etiological features. PATIENTS AND METHODS: Data was collected for analysis from patients files recorded from January 1, 2001 to December 31, 2003. RESULTS: Four hundred seventy cases

were identified (11.4% of total admissions) with a M/F sex ratio of 1.38 and a mean age of 33 years. Eighty-nine patients were infected by HIV and clinical presentations included fever (78%), meningeal syndrome (57.4%), coma (64.9%), convulsions (19%), focal neurological deficits (15.5%), and cranial nerves dysfunction (7.2%). Etiologies presented as cerebral malaria (85 cases), purulent meningitis (51 cases), neuromeningeal cryptococcosis (37 cases), tuberculous meningitis (11 cases), intracranial abscess (10 cases), toxoplasma encephalitis (4 cases), cerebrovascular attack (11 cases), and cerebromeningeal hemorrhages (3 cases). In as many as 248 cases (52.8%) no etiology could be found. The case fatality rate was 44.5% overall (209 deaths) and 68.5% among HIV-infected patients. Neurological sequels were found in 22 survivors (8.8%), consisting in focal neurological deficit (12 cases), deafness (5 cases), diplopia (2 cases), dementia (2 cases), postmeningitic encephalitis (1 case). CONCLUSION: These results show the need to improve our technical capacities in our diagnostic laboratories, the prevention of opportunistic infections in the course of HIV/AIDS infection, and the involvement of various specialists in the management of cerebromeningeal diseases.

Trans R Soc Trop Med Hyg. 2005 Aug;99(8):561-7. ELSEVIER FULL-TEXT ARTICLE Links

Treatable factors associated with severe anaemia in adults admitted to medical wards in Blantyre, Malawi, an area of high HIV seroprevalence.

- **Lewis DK**,
- **Whitty CJ**,
- **Walsh AL**,
- **Epino H**,
- **Broek NR**,
- **Letsky EA**,
- **Munthali C**,
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Severe anaemia is a common presentation in non-pregnant adults admitted to hospital in southern Africa. Standard syndromic treatment based on data from the pre-HIV era is for iron deficiency, worms and malaria. We prospectively investigated 105 adults admitted consecutively to medical wards with haemoglobin < 7 g/dl. Those with acute blood loss were excluded. Patients were investigated for possible parasitic, bacterial, mycobacterial and nutritional causes of anaemia, including bone marrow aspiration, to identify potentially treatable causes. Seventy-nine per cent of patients were HIV-positive. One-third of patients had tuberculosis, which was diagnosed only by bone marrow culture in 8% of HIV-positive patients. In 21% of individuals bacteria were cultured, with non-typhi salmonella predominating and Streptococcus pneumoniae rare. Iron deficiency, hookworm infection and malaria were not common in HIV-positive anaemic adults, although heavy hookworm infections were found in 6 (27%) of the 22 HIV-negative anaemic adults. In conclusion, conventional treatment for severe anaemia in adults is not appropriate in an area of high HIV prevalence. Occult mycobacterial disease and bacteraemia are common, but iron deficiency is not common in HIV-positive patients. In addition to iron supplements, management of severe anaemia should include investigation for tuberculosis, and consideration of antibiotics active against enterobacteria.

Infez Med. 2005 Mar;13(1):33-8. Links

[Evolution in the hospitalization for infectious diseases among non-EU patients in Emilia Romagna.]

[Article in Italian]

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- **Passini A**,
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In the Emilia Romagna (ER) area, between 1996 and 2000, a progressive increment in hospitalization for TBC, malaria, AIDS and hepatitis in non-EU patients was observed. This study aims to determine whether this trend was confirmed in 2001 and in which cities the increase was most significant.

The Hospital Discharge Cards (HDC) registered in ER for non-EU patients in the relevant period were examined. In 2001, of 20,980 hospitalization cases of non-EU patients, 394 (1.87%) were attributed to infectious diseases, amounting to an increase of 1.77% over 2000. Of the 394 patients 250 (63.45%) were male and 144 (36.55%) female. The most represented age group was 20-39 yrs. Male patients more frequently come from Morocco (54), Senegal (45), Brazil (43), females from Nigeria (36), Morocco (26) and Ghana (14). The towns and cities where hospitalization occurred were, in decreasing order: Modena (24.6%), Bologna (19.3%), Reggio Emilia (12.9%), Ravenna (10.4%), Rimini (8.6%), Parma (8.3%), Piacenza (7.3%), Forli (4.8%), Ferrara and Cesena (both 1.8%). The Hospital Departments primarily involved were: Infectious Diseases with 213 hospitalizations (54%), Pneumology 69 (17.5%), Medicine 44 (11.1%), and Paediatrics 39 (9.9 %). Hospitalization causes were, in order of frequency: TBC with 137 cases (34.8%), malaria 75 cases (19%), AIDS 72 cases (18.3%), viral hepatitis 56 cases (14.2%), septicaemia 22 cases (5.6%) and Salmonella spp. infections 18 cases (4.5%).

PMID: 15888980 [PubMed - in process]

Med Trop (Mars). 2004;64(6):587-94. Links

[Tuberculosis control in the world: results and challenges]

[Article in French]

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The modern tuberculosis control strategy, which focuses on identifying and curing infectious cases, has made remarkable progress in recent years. This strategy, known as DOTS, receives significant support from bilateral and multilateral donors, in particular from the recently created Global Fund against AIDS, Tuberculosis and Malaria. Although case finding rates are still far too low everywhere in the world (45%), cure rates among infectious cases (target 85%) are progressing, but are still too low in Africa (71%). Nevertheless, the spread of the HIV/AIDS epidemic had led to a dramatic increase in the number of tuberculosis cases, even in countries where tuberculosis programmes have been functioning well for several years; in those

countries that are heavily affected by HIV/AIDS, tuberculosis seems to be difficult to control if no progress is made in controlling the HIV epidemic. Health services are often too centralised, particularly in the big cities, and all health structures need to be involved in fighting tuberculosis. Treatment possibilities are limited; new research has been initiated to find new anti-tuberculosis drugs, but it is extremely important to take care to avoid the development of resistance to those drugs that are available. The main challenge in vanquishing tuberculosis is still that of development, mainly of the health services, and particularly their human resources. Tuberculosis elimination is necessarily a long-term goal that will require constant effort spanning several decades.

Infect Dis Clin North Am. 2005 Mar;19(1):121-35, ix

The impact of HIV infection on tropical diseases.

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HIV and tropical infections affect each other mutually. HIV infection may alter the natural history of tropical infectious diseases, impede rapid diagnosis, or reduce the efficacy of antiparasitic treatment. Tropical infections may facilitate the transmission of HIV and accelerate progression from asymptomatic HIV infection to AIDS. This article reviews data on known interactions for malaria, leishmaniasis, human African trypanosomiasis, Chagas' disease, schistosomiasis, onchocerciasis, lymphatic filariasis, and intestinal helminthiases.

Hepatic pathology in AIDS: a pathological study from Mumbai, India.

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OBJECTIVES: To assess the spectrum of hepatic disorders in AIDS, liver specimens from 171 patients (155 autopsies and 16 biopsies) were reviewed. METHODS: A retrospective and prospective study of 171 autopsy and biopsy specimens was carried out at a tertiary level hospital in Mumbai, India. RESULTS: Of the patients included in the study, 127 (74%) were male and 44 (26%) were female. The heterosexual route was the predominant mode of HIV transmission, identified in 163 (95%) patients. A total of 99 of 171 patients (58%) showed significant pathological lesions, and the most common pathological processes involving the liver appeared to be secondary to infections. None of our patients showed isolated infectious diseases of the liver. The spectrum of liver diseases identified was as follows: tuberculosis in 70 patients (41%), cryptococcosis in eight (5%), cytomegalovirus infection in six (3%), hepatitis B infection in five (3%), candidiasis in one (0.5%), malaria in one (0.5%), cirrhosis in six (3%), amyloidosis in one (0.5%) and primary hepatic lymphoma in one (0.5%). CONCLUSIONS: AIDS patients were found to have a high prevalence of underlying hepatic abnormalities. The spectrum of disease among patients with AIDS in India differs from that in developed countries. Our results suggest that hepatic tuberculosis is more common in AIDS than previously recognized, and that liver specimens should be examined routinely for the presence of acid-fast bacilli.

Cent Afr J Med. 2003 May-Jun;49(5-6):66-71. Links

Malaria and HIV co-infection: available evidence, gaps and possible interventions.

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OBJECTIVES: To review the evidence of association between malaria and HIV/AIDS co-infection for purposes of developing strategies for malaria control. DESIGN: Desktop review of literature. SETTING: Harare, Zimbabwe. MAIN OUTCOME MEASURES: Response to treatment, development of severe malaria, malarial immunological response in HIV/AIDS positive people and incidence of malaria in HIV/AIDS positive individuals. RESULTS: HIV-1 infection increases the incidence

of Plasmodium falciparum parasitaemia and is associated with the development of severe malaria, commonly anaemia, cerebral malaria and high parasite density (OR = 2.56; 95% CI = 1.53 to 4.29; p < 0.001). The efficacy of chloroquine and sulphadoxine-pyrimethamine in reducing placental malaria in HIV-1 positive pregnant women was impaired compared to HIV-1 negative pregnant women. However, the situation in non-gravid HIV-1 positive people as regards efficacy of chloroquine and sulphadoxine-pyrimethamine prophylaxis is not known. Also not known is the relationship between malaria parasitaemia without symptoms and HIV-1 infection, the results of which may provide useful information regarding malaria control and prevention in HIV-1 positive people. CONCLUSIONS: HIV-1 positive people staying in malaria endemic areas are at risk of developing severe malaria. Malaria prevention using insecticide-treated bednets and indoor residual house spraying may be the best available options for these people. Chloroquine and sulphadoxine-pyrimethamine prophylaxis require further studies to verify their efficacy, in the presence of HIV-1/AIDS infection.

Trans R Soc Trop Med Hyg. 2004 Jul;98(7):435-7. ELSEVIER FULL-TEXT ARTICLE Links

An antimalarial extract from neem leaves is antiretroviral.

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An acetone-water neem leaf extract with antimalarial activity was evaluated in vitro at 5 microg/ml for inhibition of adhesion of malaria parasite-infected erythrocytes and cancer cells to endothelial cells, and at 10 microg/ml for protection of lymphocytes against invasion by HIV. The extract was also evaluated in 10 patients with HIV/AIDS at 1000 mg daily for 30 d. The mean binding of infected erythrocytes and cancer cells per endothelial cell was 15 and 11 respectively in the absence of the extract, and 0 and 2 respectively in with the extract. In the absence and presence of the extract, 0% and 75%, respectively, of lymphocytes were protected. In the

treated patients, haemoglobin concentration, mean CD4+ cell count and erythrocyte sedimentation rate, which were initially 9.8 g/dl, 126 cells/microl and 90 mm/h respectively, improved to 12.1 g/dl, 241 cells/microl and 49 mm/h. Mean bodyweight and platelet count, initially 57 kg and 328 x 10(3)/mm3 respectively, increased to 60 kg and 359 x 10(3)/mm3. No adverse effects were observed during the study. The extract showed antiretroviral activity with a mechanism of action that may involve inhibition of cytoadhesion. The results may help in the development of novel antiretroviral and antimalarial drugs.

Chin Med J (Engl). 2003 Dec;116(12):1810-20.

Impact of acute vivax malaria on the immune system and viral load of HIV-positive subjects.

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- **Xiao B**,
- **Shi W**,
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OBJECTIVE: To explore the mechanisms of malariotherapy for human immunodeficiency virus (HIV)-infected patients and to identify which stage(s) of HIV infection is suitable for the treatment of malariotherapy. METHODS: Therapeutic acute vivax malaria was induced and terminated after 10 fever episodes in 12 HIV-1-infected subjects: Group 1 (G1) had 5 patients with CD(4) T-cell counts >or=500/ micro l at baseline, Group 2 (G2) had 5 patients with CD4 at 499 - 200/ micro l and Group 3 had 2 patients with CD(4) < 200/ micro l (not included in statistical analysis). Enzyme-Linked-Immuno-Sorbent Assay (ELISA) was used to measure plasma levels of cytokines and soluble activation markers. Flow cytometry was used to measure levels of lymphocyte subsets and phenotypes and CD(4) cell apoptosis. Bayer bDNA assay was used to test

plasma levels of HIV-1 RNA (viral load). Samples were taken and tested twice before malaria (baselines), three times during malaria and seven times after termination of malaria (at day 10 and 1, 3, 6, 12, 18 and 24 months). RESULTS: Levels of plasma tumor necrosis factor-alpha (TNF-alpha), soluble TNF-alpha receptor-2 (sTNF-RII), neopterin (NPT) and soluble IL-2 receptor (sIL-2R) significantly increased during malaria and sharply reduced to baselines post malaria in all groups. Stronger responses of the aforementioned factors were seen in G2 than in G1 during malaria (P = 0.081, 0.001, 0.013, 0.020). CD4 count and percentage; CD(4)/CD(8) ratio and CD(25)(+) and CD(4)(+)CD(25)(+) percentages increased but HLA-DR+ percentage decreased either during or post malaria in G2. Most G2 patients experienced sustained increase but most G1 patients underwent natural history decline of CD(4) counts and percentages during 2-year follow-up. Percentage of apoptotic CD(4) cells decreased post malaria in all groups. G3 patients had weaker immune responses, however, one advanced AIDS patient in this group experienced clinical improvement after malariotherapy. Most of the 12 patients experienced increase of HIV viral load during malaria but the viral load returned to baseline levels 1 - 3 months after cure of malaria and remained near baseline levels for up to two years. CONCLUSIONS: Part of the mechanisms of malariotherapy is to induce high levels of cytokine activities and subsequently the changes of T-lymphocyte subsets and phenotypes in HIV-infected patients. These findings suggest that malariotherapy may treat HIV-1-infected patients whose CD4 baselines are in the range of 500 - 200/ micro l.

Antivir Ther. 2003 Oct;8(5):385-93

Medium-term survival, morbidity and immunovirological evolution in HIV-infected adults receiving antiretroviral therapy, Abidjan, Cote d'Ivoire.

- **Seyler C**,
- **Anglaret X**,
- **Dakoury-Dogbo N**,
- **Messou E**,
- **Toure S**,
- **Danel C**,
- **Diakite N**,

- **Daudie A**,
- **Inwoley A**,
- **Maurice C**,
- **Tonwe-Gold B**,
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OBJECTIVES: To evaluate survival, morbidity, and CD4 and viral load (VL) evolution in HIV-infected adults receiving antiretroviral therapy (ART) in Cote d'Ivoire. METHODS: Since 1996, 723 HIV-infected adults have been followed up in the ANRS 1203 cohort study in Abidjan. For those patients who received ART, we describe data between ART initiation and August 2002. RESULTS: One-hundred-and-one adults (61% women) were followed up under ART for a median of 17 months. At ART initiation, median age, CD4 count and VL were 36 years, 135/mm3 and 5.3 log10 copies/ml, respectively. Initial ART regimens were two nucleoside reverse transcriptase inhibitors (NRTIs) plus one protease inhibitor in 74 patients, two NRTIs plus one non-nucleoside reverse transcriptase inhibitor in 16, and two NRTIs in 11. No patient was lost to follow-up. The most frequent causes of severe morbidity were bacterial infections [11.6/100 person-years (PY), 95% CI: 7.2-18.7], drug-related events (6.5/100 PY, 3.5-12.0), tuberculosis (3.1/100 PY, 1.3-7.4) and malaria (3.1/100 PY, 1.3-7.4). The incidence of death was 3.0/100 PY (1.1-8.0) in patients with baseline CD4 > or = 50/mm3 and 16.1/100 PY (7.2-35.9) in patients with CD4 < 50/mm3. Fifty percent of causes of death were active infections pre-existing ART initiation, mainly atypical mycobacteriosis. After 1 year, 51% of patients had undetectable VL, 28% had detectable VL reduced by more than 0.5 log10 copies/ml since ART initiation, and the median gain in CD4 was +115/mm3. CONCLUSION: Medium-term survival under ART may be as good in Africa as in industrialized countries, provided that patients benefit from access to care for opportunistic infections, including bacterial diseases, tuberculosis and malaria.

Clin Infect Dis. 2003 Mar 1;36(5):652-62. Epub 2003 Feb 17.

Review of human immunodeficiency virus type 1-related opportunistic infections in sub-Saharan Africa.

- Holmes CB,
- Losina E,
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Understanding the natural history of human immunodeficiency virus type 1 (HIV-1) and opportunistic infections in sub-Saharan Africa is necessary to optimize strategies for the prophylaxis and treatment of opportunistic infections and to understand the likely impact of antiretroviral therapy. We undertook a systematic review of the literature on HIV-1 infection in sub-Saharan Africa to assess data from recent cohorts and selected cross-sectional studies to delineate rates of opportunistic infections, associated CD4 cell counts, and associated mortality. We searched the MEDLINE database and the Cochrane Database of Systematic Reviews and Cochrane Clinical Trials Register for English-language literature published from 1990 through April 2002. Tuberculosis, bacterial infections, and malaria were identified as the leading causes of HIV-related morbidity across sub-Saharan Africa. Of the few studies that reported CD4 cell counts, the range of cell counts at the time of diagnosis of opportunistic infections was wide. Policies regarding the type and timing of opportunistic infection prophylaxis may be region specific and urgently require further study

Microbes Infect. 2002 Oct;4(12):1265-70. ELSEVIER FULL-TEXT ARTICLE Links

Interactions between malaria and HIV infection-an emerging public health problem?

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Recent evidence demonstrates interactions between malaria and HIV infection. HIV-infected people are more likely to experience clinical malaria, and acute malaria can up-regulate HIV replication, leading to higher plasma viral loads. This is most serious in pregnant women, where HIV infection increases the risk of placental malaria, leading to increased infant morbidity and mortality.