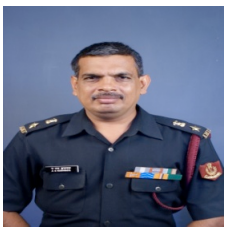
INFECTIONS OF MILITARY SIGNIFICANCE
ORAL ABSTRACTS



ARVIND SINGH KUSHWAHA

Lieutenant Colonel Arvind Sign Kushwaha is a medical graduate and postgraduate in Community Medicine from Armed Forces Medical College Pune, India. He has served in varied terrains and has held different appointments in his 22 years of service. He has special interest in the fields of military medicine, emerging infectious diseases and family health. He has experience in managing disease outbreaks and combat stress related disorders. He is a recognised teacher at Pune and Maharashtra University of Health Sciences, Nashik. He has published numerous articles and has been a resource person at many professional conferences. An academician to the core he has recieved numerous awards. He is a keen sportsman and fitness freak.

Outbreak of Meningococcal Infection amongst Soldiers Deployed in Operations

AS Kushwaha, SK Aggarwal, MM Arora, Armed Forces Medical College, Pune (INDIA)

Background: Meningococcal infection may lead to life threatening meningitis and fulminant meningococcal sepsis. Sporadic cases of meningococcal infection have been reported in soldiers but no outbreak in soldiers has been reported earlier from India. This outbreak in soldiers serving in counter insurgency role under field setting was effectively controlled without compromising their operational commitment. **Methods:** This is an epidemiological investigation and control of an outbreak of meningococcal infection, bringing out the predisposing factors and highlighting the role of early diagnosis and management of cases. Mass chemoprophylaxis in contacts was used as an effective control measure in the absence of vaccine in this institution based outbreak. **Result:** Out of a total of 17 cases reported, 14 presented as meningitis and three as meningococcemia. Two cases of meningococcemia ended fatally. Serogroup A of Neisseria meningitidis was responsible for this outbreak. Gross over- crowding was the predisposing factor. **Conclusion:** An outbreak of meningococcal infection in soldiers deployed in counter- insurgency role was effectively contained using mass chemoprophylaxis in the absence of meningococcal vaccine. MJAFI 2010; 66: 4-8
Key Words: Meningitis; Meningococcal infection; Outbreak; Soldier

CHUKWUEMEKA UGWUADU

Surgeon Commodore CS Ugwuadu was born in Lagos, Nigeria on 08 Aug 1957. He had his early Education at Methodist Primary School, Surulere, Lagos (1963-71) and King's College, Lagos (1972-76). He attended the Faculty of Medicine, University of Nigeria between 1976 and 1982 and obtained the MB BS degree. Following his national youth service at 23 Armoured Brigade Field Ambulance, Bauchi in 1983-84), he was a Medical Officer II in Imo State Health Management Board (1984-85). He was commissioned Lieutenant (NN) – 1986 and became Medical Officer - Malu Road Medical Centre; Base Medical Officer - NNS Okemini & NNS Anansa, he was later Fleet Medical Officer - NIGCON ECOMOG Monrovia, Liberia in 1991. He undertook Residency Training in Haematology & Blood Transfusion at the Lagos University Teaching Hospital and obtained the Fellowship in Pathology of the Natioan Postgraduate Medical College of Nigeria (FMCPath). He also has MSc Haematology from the University of Lagos. Commodore Ugwuadu is the Secretary General Pan-African Committee on Military Medicine since 2009. He is a Member of the Nigeria Medical

Association, Nigerian Society for Haematology and Blood Transfusion, Fellow, Nigerian Postgraduate Medical College of Pathology; Patron of the Defence Health Club, Abuja. He is married with 3 children.

The Seroprevalence of Antibodies To The Human Herpes Virus Type 8 Amongst Blood Donors And HIV Infected Patients In A Nigerian University Teaching Hospital (A Pilot Study).

CS Ugwuadu, AS Akanmu, TA Adeyemo. Pan-African Committee of Military Medicine, Defence Headquarters, Abuja, (NIGERIA)

Background: Kaposi's sarcoma (KS) is the commonest AIDS defining malignancy and has been aetiologically associated with the Human Herpesvirus type 8. This study aims to determine the seroprevalence of Human Herpes virus type 8, (Kaposi Sarcoma associated herpes virus) in HIV infected patient and compare with HIV negative blood donors in Lagos, Nigeria. **Method:** Subjects were donors recruited from the hospital blood donors' clinic and the HIV clinic. Questionnaire data were collected and HHV-8 serologic tests by ELISA were performed on a consecutive, non-probability sample of 42 blood donors and 48 HIV infected persons attending the HIV clinic at the Lagos University Teaching Hospital. HHV-8 prevalence and 95% Confidence Intervals were calculated using standard epidemiological methods. Results: There was a statistically significant difference in the seroprevalence of antibodies to HHV8 amongst blood donors (16.67%) and that of HIV infected patients (43.75%). $\chi 2 = 7.45$, $P = 0.0063$. There was no difference ($P = 0.99$) in the seroprevalence between HIV positive males (45.45%) and their female counterparts (42.31%). None of the HIV infected subjects had Kaposi's sarcoma. **Conclusion:** The seroprevalence of antibodies to HHV8 appears to be very high amongst both blood donors and HIV infected population in this environment. This however contrasts with the historical low prevalence of KS in the populations of HIV infected patients within the same environment.

CORNELIUS ENGELBRECHT

Colonel Cornelius Johannes Engelbrecht joined the South African Military Health Service (SAMHS) in 1992 as a Medical Officer, and after working in various sickbays in the Area Military Health Formation he was promoted to Medical Examination Officer at Vermeulenhuis, doing entry level health assessments for recruitment where he was exposed to HIV through pre- and post test counselling on new recruits. He established the first HIV and AIDS clinic in the SAMHS in 1994, in 1996 he was involved with the development of the Occupational Health and Safety policy of the DOD and played an extensive role in the implementation of Occupational Health in the Department of Defence. He developed the HIV and AIDS Policy for the Department of Defence (promulgated 1999), developed the Masibambisane HIV Prevention Campaign (launched 2000), assisted in obtaining donor funding for the first National Anti-retroviral Treatment Programme in South Africa (2003), and co-wrote the HIV and AIDS Master Trainers Programme which he presented together with a multi-

professional team to train the first Master Trainers for the SAMHS. He developed the HIV training module currently being presented at the Warrant Officers Academy, and was recently appointed as SSO Research at the Directorate HIV and AIDS Programmes.

Without Prejudice: Managing HIV and AIDS Infection in the South African National Defence Force

CJ Engelbrecht, JJ Crause, TE Mohale. South African Military Health Service.

On the 16 0f May 2008 in Court Case No 18683/07, the High Court of South Africa delivered judgement that the health requirements of the South African National Defence Force with regard to recruitment, deployment and promotion of HIV positive members were unconstitutional and set aside, and ordered the amendment of these health requirements within 6 months. What has changed? This paper will explore the impact that the Judgement had on the South African National Defence Force, with particular reference to the changes made to policy, the obstacles met in giving effect to the order, and the challenges currently being experienced as a result of the decision by the High Court.

EZEKIEL TAIWO ADEBAYO

Lieutenant Colonel Ezekiel Taiwo Adebayo studied dentistry at the University of Benin Dental School between 1984-1990. Commissioned into the Nigerian Army in December, 1992, he has served in artillery and medical units. A specialist in oral and maxillofacial surgery, he obtained the fellowship of the West African College of Surgeons in 2000 and a Master of Public Health Degree from the Ahmadu Bello University, Zaria, Nigeria in 2008. His research interests are facial trauma, oral oncology and public health issues. Currently, he is the Head of Army Dental Centre, Military Hospital, Ikoyi, Lagos, Nigeria.

Incidence of Human Immunodeficiency Virus after Foreign Deployments- The Nigerian Army Experience

ET Adebayo[1], NAA Hussain[2], OA Ogunbiyi[1]. [1]Military Hospital, Ikoyi, Lagos, [2]82 Division Medical Services, Enugu, (NIGERIA)

Background: The military generally interact closely with the civilian population in peacekeeping missions. This interaction could result in disease transmission between both populations. However, scant data exist of the impact of this interaction on HIV prevalence in the military populations. In Nigeria, only HIV sero-negative soldiers participate in peacekeeping operations. The aim of this paper is to present the changes in the pattern of HIV prevalence in the Nigeria Army following peacekeeping operations in Sudan and Liberia between 2007-2008. **Patients and Methods**: This was a review of laboratory test records of personnel before and after participating in a peacekeeping mission outside Nigeria between January 2007 and December 2008. Only persons negative for the anti-HIV antibodies during pre-deployment HIV Counselling and Testing (HCT) were allowed to proceed for the peacekeeping mission. HCT was done in line with the national algorithm. **Results**: A total of 7,756 soldiers had post induction HIV screening after six months of foreign missions: of these, 6 units returned from Liberia while 5 were from Sudan. Post induction HIV prevalence was 2.1% as 163 all ranks tested positive from 11 units. There was no statistically significant difference between prevalence in officers and soldiers. Also, there was no difference following mission in Sudan or Liberia.. **Conclusion**: The post-induction incidence rate of 2.1% is far in excess of the possible false negative range of the test kit used. Hence, it is our belief that some cases of HIV were contracted during the six months stay in Liberia and Sudan. The need to re-energise our preventive care services especially at the various peace-keeping missions is stressed.

NEMANJA BOROVCANIN

Major Dr Nemanja Borovcanin, a specialist Transfusiologist is the Head of the Blood Conservation Department with the "NAT–PCR" Laboratory, Institute of Transfusiology, Military Medical Academy, Belgrade, Serbia. He was born on December 1st 1974, in 2000, he finished his medical school education, became a transfusiology specialist in 2006 and obtained a PhD in 2009. In 2010, he was appointed Head of the Blood Conservation Department with the "NAT–PCR" Laboratory. Previously, he had been Head of the Immunohematology and Immunogenetics Department (2006). He is a Member of the Association of Anaesthesiologists, Reanimates and Transfusiologists and Serbian Medical Society – Transfusiology section as well as the Doctors' Chamber of Serbia.

New Technologies: NAT and PRT for Prevention of Transfusion Transmitted Infections

Nemanja Borovcanin,Miodrag Jocic,Dragana Jovicic,Dusan Vucetic,Bela Balint.

Institute of Transfusiology,Military Medical Academy,Belgrade, (SERBIA).

Objective: The Institute of Transfusiology implemented two new technologies for prevention of transfusion transmitted infections,during 2007 and 2009. Firstly,we started to use Nucleic Acid Testing (NAT) for detection of DNA and RNA of hepatitis B virus (HBV),hepatitis C virus (HCV) and human immunodeficiency virus (HIV) in samples of all donors.In June 2009, we began to treat plasma and platelets with Pathogen Reduction Technology (PRT). **Methodology And Sampling:** All donors were tested by enzyme immunoassays (EIA) (Behring,Abbott,Ortho,Bio-Rad,Biokit) for presence of HBsAg,HIV Ag-Ab,anti-HCV Ab.All EIA negative samples were tested by NAT in minipools of 24 samples for HBV,HIV and HCV (COBAS Ampliprep/Amplicor,Roche Diagnostics).EIA repeatedly reactive samples were confirmed by confirmatory assays (Abbott,Chiron,Innogenetics),and also were tested by individual donation (ID) HIV RNA,HCV RNA and HBV DNA.Patients who have undergone transplantation,received plasma and platelets,treated with PRT (Mirasol,Caridian BCT).We made 54 pools from 216 units of platelet concetrates from buffy coat.Than we divided 54 pools in 3 group of 18 pools.The first group was contaminated with Staphylococcus aureus,second with Staphylococcus epidermidis and third with Escherichia coli.All groups were treated with PRT. **Results:** Since June 2007 till June 2011, we tested 50 369 donors in MP of 24 donations and 2 689 in ID.Because of the application of NAT (in combination with serological testing),we prevented transfusion transmission of HBV and HCV in 9 cases.We found reduction in number of bacteria (Staphylococcus aureus,Staphylococcus epidermidis,Escherichia coli) for 3-5 log.The largest reduction was in platelets contaminated with Escherichia coli. **Conclusion**: NAT is very important in early detection of HBV,HCV and HIV.PRT is a safe and useful method in the treatment of transplant recipients.
Key Words: NAT,PRT.

HA ETTEHADI

Formulation of a Nanoemulsion with Broad-Spectrum Sporocidal Activity

HA Ettehadi; Panahi Y.
Chemical casualties Research Center of Baghiatallah Medical Sciences University

Introduction: Pathogens especially bacterial spores are responsible for a plethora of human and animal ills like bacillus anthracis! Because spore is the stable form of bacteria that resists harsh conditions and extream temperatures.Most of antibiotic and antimicrobial therapy suffers from several problems, particularly when strains of various bacteria appear that are resistant to antibiotics. In addition, disinfectants (e.g., sodium hypochlorite, formaldehyde and phenols) that are highly effective against Bacillus spores, are not well suited for decontamination of the environment, equipment, or casualties. This is due to toxicity that leads to tissue necrosis and severe pulmonary injury following inhalation of volatile fumes. Formulation of antiseptic compound with nontoxic material in the scale of nano is the new approach in pharmaceutical disinfectants. **Method:** We are designed and formulated a nanoemulsion with non toxic materials. with a droplet size between 20 and 500 nm. It should be noted that when all the components of emulsion are combined in one composition but are not in a nanoemulsion structure, the mixtures is not as effective as an antimoicrobial as when the

components are in a nanoemulsion structure. This composition comprising an oilin- water emulsion, including an oil component is selected from the group consisting of plant oil,. a halogen-containing compound an aqueous phase comprising and nonionic surfactant. The droplets are stabilized by surfactants. Antimicrobial and Sporocidal activity was tested with bacillus cereous as a standard simulation of Bacillus Anthrasis. Antibiogram tests were performed with different dilutions. **Results:** This investigation shows the satisfactory results which can help us to replace the common preparations with the safe one for decreasing the infectivity, morbidity and rate of mortality associated with a variety of pathogenic organisms.

KORZENIEWSKI KRZYSTOF

Col (Assoc Prof) Korzeniewski Krzysztof MD, PhD is the Head of Epidemiology and Tropical Medicine Department, Military Institute of Medicine, Gdynia, Poland. He is a specialist in tropical medicine, epidemiology and dermatology-venereology. The main area of his research interests are health hazards in different climatic and sanitary conditions in the military environment and health problems of soldiers deployed to peace and stabilization military operations. He has particicpated in military service in peace and stabilization operations such as medical and humanitarian officer in the United Nations Interim Force in Lebanon – UNIFIL (1999/2000, 2001/2002), Iraqi Freedom Operation (Iraq 2004), Enduring Freedom Operation (Afghanistan 2005), United Nations Mission in the Central African Republic and Chad – MINURCAT II (Chad 2009), International Security Assistance Force (Afghanistan 2010, 2011).

Prevalence of Intestinal Protozoan Infections among Peacekeepers in Eastern Chad, Central Africa

Korzeniewski Krzysztof, Military Institute of Medicine, Department of Epidemiology and Tropical Medicine, Gdynia, (POLAND).

Problem Statement: Diagnosed giardiasis poses a considerable public health problem, especially for soldiers on peacekeeping mission. It also constitutes an epidemiological hazard for their relatives in country of origin; in cases of importing pathogens.**Objective:** The study presents results of the research into the prevalence of intestinal protozoan infections with *Giardia lamblia* occurring among Polish soldiers serving in the United Nations operation (MINURCAT) in eastern Chad, Central Africa.**Material and Methods:** The material subjected to analysis was faecal specimens collected from 247 patients of Polish nationality aged 21 to 51, residing temporarily (6-month period, November 2008 – April 2009) in Sahel region. Three samples of faeces were collected from each patient. The samples were then analyzed in terms of incidence of water-borne infections caused by

Giardia lamblia pathogen. Direct smear in Lugol's solution and preparation from decantation in distilled water were applied as the laboratory testing methods.**Results:** Out of the 247 soldier's faecal samples analyzed, 55 cases with giardiasis (*G. lamblia*) were diagnosed; thus giving a prevalence of 22.3%. **Conclusions:** In Eastern Chad, a region where soldiers of the UN mission execute mandatory tasks, there is a high risk of water-borne diseases. The source of parasitic infections are infected water reservoirs. Treatment of the infected cases and public health control measures are necessary to reduce the prevalence of giardiasis among the soldiers.

NEJIB DOSS

Colonel Professor Nejib Doss was born on 5 October 1953. He was an assistant in dermatology between 1981-85 at the Military Hospital at BEGIN-Paris. From 1987, he was an Associate Professor till 1992 when he became Professor and Head of Department of Dermatology at the Military Hospital of Tunis, Tunis, Tunisia. Previously, he was Deputy Secretary General of the Pan Arab League of Dermatologists (2000-2004). In addition, he is the Head of the STI and HIV Military Prevention Program and the Vice President of the Tunisian Society of Dermatology and Venereology since 2006. Presently, he serves as a Member, International Union against Sexually Transmitted Infections Africa Core Team and Member, Directory Board, International Society of Dermatology since 2009.

STI and HIV Prevention Policy Among Militaries : The Tunisian Experience

N. Doss, C. Tounsi, R. Allani, A. Mrabet, R. Dhaoui
Department of Dermatology, Military Hospital of Tunis – 1089, Tunis, (TUNISIA)

Sexually transmitted infections (STI) constitute a public health problem with attendant complications such as bacterial resistance to antibiotics, discovery of fatal diseases transmitted by sexual ways (viral hepatitis B, AIDS) and of the incrimination of some of them in the appearance of sterility and even cancer of the cervix. The annual incidence of STI in Tunisia is estimated at 1%. Within the framework of supporting the national effort, Tunisian military health service was mobilized beside other civil partners who specialize in the fight against STI & AIDS. The Tunisian military health service in 2002 set up a public health program aimed at protecting its manpower against these plagues. Within the program, during the period of September 2007 to August 2011, it conducted: 24 Training the trainer seminars of military health personnel (general practitioners, dentists, midwife and nurses) mainly working in Army, Navy and Air Force Bases and in outpatient clinics; 1873 health education sessions were ensured by unit's Medical Doctors touching 112,356 soldiers from 41 young recruits' instruction units (recruit's rotation each 3 months); Condoms are provided for Free in almost all barrack. 358,984 condoms were taken starting from the distributors; Epidemiological survey: No case of AIDS is diagnosed but an average of 531 annual cases of STI.This program allowed the reinforcement of reinforce the precautionary measures for sexual and reproduction health and facilitating access to

condom for young military personnel. With this policy, the prevalence of HIV is very low and the most frequent disease is condyloma acuminate

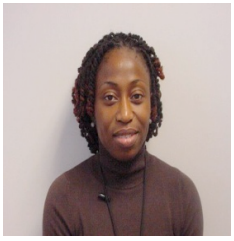
MM TRUTER

Microbiological Survey Programme for Food Premises, AMHUFS, SANDF

MM Truter
SAMHS, AMHU FS, Environmental Health Depart

Food safety concerns include additives, spoilage, pesticides as well as the presence of micro-organisms. Food contact surfaces are a major concern for food premises in the South African National Defence Force (SANDF) in controlling the spread of food-borne pathogens (Aerobic Colony Count, Bacillus species, Clostridium perfringens, Campylobacter species, Escherichia coli, Enterobacteriaceae, Listeria species, Staphylococcus aureus and Salmonella species. It is vital that the bacteriological quality of these surfaces must be assessed. Many cases of food-borne illnesses have been attributed to temperature abuse, inadequate cooking and the use of contaminated raw ingredients. Cross-contamination has also been identified as a significant risk factor between raw and cooked foods via food contact surfaces. This sampling program implemnted to determine the effectiveness and adequateness of cleaning and sanitation in food premises within the SANDF, the bacteriological quality of drinking water and milk provided to the SANDF as well as compliance to the Health Act, Act 63 of 1977. For safe water and food provision control: • Surface samples: 3-4 surface samples per food establishment per month. • Milk: 2 x per year within Tempe; Quarterly at outside units. • Chemical/Bacteriological food samples as needed. • Water samples: Tempe, Afb Bspt, Dod Mob Cen, OP Corona – monthly, Outside units -Quarterly. The objective of this program is to survey the bacteriological contamination on selected food contact and non-food contact areas, milk and drinking water in the SANDF. Regular bacteriological analysis of potable water helps to determine whether there is a serious health risk from bacteria in potable water. The most important microbial diseases transmitted through water are Cholera, Paratyp¬hoid fever, Typhoid fever, Amoebic Dysentery, Bacillary Dysentery, Poliomyelitis and Infectious Hepatitis. A baseline for future comparisons will be developed as well as to motivate for better specialized cleaning materials in the food premises. The outcome of this programme at the end of the assessment period will be to give training and supervision

to ensure proper hand washing, appropriate cleaning and sanitation procedures are in place, to reduce or eliminate cross-contamination. A glimpse of some of the results: WATER SAMPLES TAKEN



UZO CHUKWUMA

Ms Chukwuma is an Epidemiologist and has worked in the area of clinical epidemiology in the public health setting for the past nine years. She is also an evaluator for clinical and public health programs. Her formal epidemiology training was obtained from the Eastern Virginia Medical School, during which she received her Master's in Public Health. She currently is the Deputy Department Head for the EpiData Center at the Navy and Marine Corps Public Health Center. She also heads the Clinical Epidemiology Department at the EpiData Center. As the Division Head for clinical epidemiology, she is responsible for the surveillance of infections, antimicrobial resistance, medical injuries and patient safety. Her program provides surveillance support primarily to Navy Medicine but also supports the Department of Defense. She has co-authored journal articles and published abstracts. Her research interest is assessing multi drug resistance organism.

Innovative System for Surveillance of Antimicrobial Resistant and Emerging Infectious Organisms: System, Application and Impact on Military Readiness

Uzo Chukwuma
Navy and Marine Corps Public Health Center

Background Antimicrobial resistance surveillance in the military has improved through combined use of laboratory data and data restructuring tools to create a comprehensive system for drug resistance and emerging infection surveillance. Presentation describes methods used to establish and apply NASS, including impact on operational readiness for special populations. **Objective** Presentation describes the Navy Antimicrobial Surveillance System (NASS) for monitoring drug resistance and emerging infections, as well as the application to military mission readiness. Innovative System A repository of laboratory results was developed from Health Level 7 messages sent via an administrative electronic system used by U.S. military treatment facilities. Automated mapping schemes and algorithms were used to restructure laboratory data for analysis. BacLink and WHONET are World Health Organization tools that transpose the restructured data for epidemiological analysis. The tools characterize microorganisms and establish antimicrobial resistance profiles. **Result** NASS allows for identification of emerging infections, rapid characterization of drug resistant profiles of supported projects across the U.S. Department of Navy and Department of Defense. A surveillance project of combat patients provided epidemiological and surveillance support for operational concerns associated with infections. Based on established historical records of infections in specific areas, empirical clinical therapy was improved using infection profiles and antibiogram support. NASS was also used to actively monitor and tract emerging infections such as NDM-1and vancomycin-resistant Staphylococcus Aureus. The project routinely identified clinical isolates as suspect NDM-1and

forwarded information to the U.S. Army Multidrug Resistance Surveillance Network for further characterization and confirmation. **Conclusion** Before NASS, these capabilities did not exist in the military, because surveillance and investigation of drug resistance are historically resource intensive. NASS has demonstrated its utility to monitor antimicrobial resistance and track emerging infections in the U.S. military healthcare system and guide antimicrobial therapy recommendations. Combat injured personnel have directly benefited through improved treatment of infectio

REUBEN NKADO

Brigadier General Reuben Nkado is currently Director, Military Hospital Port Harcourt, South-South Nigeria. He was until very lately the head of 68 Military Harvard PEPFAR Program, a special HIV/AIDS treatment outfit in a military hospital in Lagos. He had his undergraduate medical education in the University of Ibadan, Nigeria (MB, BS 1983) and worked in various units of the Nigerian Army as a doctor before obtaining the Fellowship of the West African College of Physicians (FWACP) in Internal Medicine with specialisation in General Cardiology, from the University of Nigeria Teaching Hospital Enugu in 2000. He has undergone a number of military courses including the Basic Airborne (Paratroopers) Course. He is a Chief Consultant Physician/Cardiologist in the Nigerian Army Medical Corps and has for long been seriously involved in the management of HIV/AIDS in the Nigerian military and the surrounding civilian population. His interests include dialectics and didactics.

Grinding Morbidity, Excessive Mortality in HIV-Associated Renal Failure in A Military Hospital In Lagos Nigeria

Reuben Ndubuisi Nkado, 68 Nigerian Army Reference Hospital, Yaba, Lagos,(NIGERIA)

Background: Literature states that renal disease is widespread among those who are infected with HIV in sub-Saharan Africa. Infected Africans experience an increased risk of chronic kidney disease and more disturbingly, an accelerated decline of the estimated glomerular filtration rate, heralding the onset of end-stage renal disease. The economic cost of managing advanced renal disease has always been huge. Currently, one session of haemodialysis (HD) in Lagos costs about $325. Fortnightly sessions cost $650 while weekly sessions amount to $1,300 a month! Awareness of HIV in Africa south of the Sahara has increased geometrically since the coming of the (US) President's Emergency

Plan for AIDS Relief (PEPFAR) and related activities in 2003/2004. It was postulated that a fall-out should be earlier presentation of patients thus reducing the complications of advanced disease, particularly renal complications. This study aimed to verify the postulate. **Methods:** A retrospective analysis of all in-patient admissions over a period of 36 months (Feb 2008 – Jan 2011) was carried out in a clinical unit of the military hospital. The hospital has a special treatment centre for HIV disease affiliated to the Harvard PEPFAR Program in Nigeria. The analysis included those who were HIV+ on admission, those with renal impairment based on a serum creatinine level of ≥ 180 µmol/L, patients' clinical parameters and deaths. **Results:** The total number of patients admitted over the period was 611. Those who were HIV-infected numbered 360 (58.9%). A total of 257 patients died, 183 of them HIV-infected (71.2%). Sixty-one of the HIV+ patients had renal impairment on admission and at analysis, 38 had died (62.3%). In contrast, deaths among HIV-infected patients without nephropathy were 145 of 299 (48.5%). The proportion of HIV-infected patients with nephropathy who died (20.8%) was higher than the proportion of HIV-infected patients with nephropathy on admission (16.9%). Nephropathy was associated with anaemia, nausea, vomiting, anorexia and depression. **Conclusion**: Apart from the burden of HIV disease, associated nephropathy appears to be a veritable dead-weight, causing grinding morbidity and excessive mortality. Despite the increased awareness of HIV in sub-Saharan Africa, the ponderous weight of renal complications in HIV is still very much an issue.

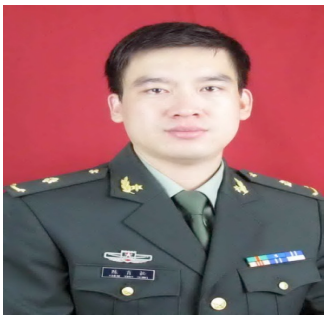
BERNARDUS FRANCOIS van HUYSSTEEN

Rabies and Its Effect on Deployment

Capt (Dr) Bernardus Francois van Huyssteen
Military Veterinary Institute

Rabies is a fatal viral disease that affects many mammals and humans, thus a zoonotic disease, and is caused by a Lyssavirus of the Rhabdoviridae family. Rabies infection is fatal in all species and none of these species has a carrier state where virus is shed in the absence of clinical signs. Rabies remains endemic throughout the world except for certain Western European countries and a number of islands. The re-emerging status of Rabies in Africa is a big concern. More than 99% of all human rabies deaths occur in the poorest developing countries. About 55 000 human deaths occur in canine rabies endemic areas of which 31 000 are in Asian countries and 24 000 in African countries annually. Rabies virus is transmitted via the saliva of infected animals and has the highest case fatality rate of any known human infection if the disease has manifested. Once the virus has entered the central nervous system of the host, the resulting encephalomyelitis is fatal. Fortunately the availability of efficacious and safe vaccines and immunoglobulin has prevented many fatalities. Clinical manifestation of Rabies in dogs will be seen as a change in behaviour, aggression, attacking and biting anything, exaggerated responses to light and sound. Dogs will snap at imaginary flying insects, be disorientated, wander aimlessly and drooling saliva. All will lead to uncoordination with progressive paralysis, dilated

pupils, photophobia, convulsions and muscle spasms. There is a group of people with increased occupational risk of exposure to infection which will include veterinarians, wildlife handlers, laboratory personnel and military staff and soldiers who will deploy in endemic areas. Pre-exposure prophylaxis is very important to soldiers and staff to be deployed to endemic areas. This will have a great financial impact on the deploying force. This will go hand in hand with education of soldiers and staff about the disease, its clinical signs and post-exposure treatment.



CHEN XIAOSONG

Major Chen Xiaosong was born on 26th September, 1978. He attended Anhui Medical University, between 1997-2002, where he majored in Clinical Medicine, obtaining the Bachelors degree of Clinical Medicine. After further study, he obtained the degree of Masters of Orthopedics and Traumatology from the same institution. He has served as a surgeon, mainly on Orthopaedics, especially Traumatology. Currently, he is attending doctor, Department of Orthopaedics, No 105 Hospital of the People's Liberation Army of China. In 2001, he got the Anhui Medical University Award and also in 2010, he was given another Award.

Effect of seawater immersion on healing of open tibial fractures in rabbits

Chen Xiao-song, Heng Xun-sheng, MA Wu-xiu, Wang Chang-sheng, Fang Jian
Department of Orthopedics, No. 105 Hospital of CPLA, Hefei 230031, (CHINA).

Objective: To observe the effects of the healing process of open tibial fractures in rabbits coupled with seawater immersion. **Methods:** 44 New Zealand rabbits were randomly divided into two groups:22 rabbits

in group A, 22 rabbits in group B. the rabbits in the two groups were made to have open tibial fracture. The wounded limbs of group A were exposed in the air for three hours. And group B were immersed in seawater for three hours. Thereafter, the wounds were sutured after debridement. The rabbits were sacrificed on days 7, 14,21 and 28 respectively after surgery. Then, samples were collected for histopathology using both electron microscope and light microscope. Meanwhile the expression of vascular endothelial growth factor (VEGF) and transforming growth factor-β1 (TGF-β1) in tissues were observed. **Result**: By electron microscopy, osteoblasts of group B were observed injury early after the fracture. Performance as cell membrane and nuclear membrane damage, mitochondrial swelling and vacuolation, nuclear dissolution of necrosis.21 and 28 days of osteoblasts of group B morphology returned to normal. Immunohistochemistry showed that the expression of VEGF and TGF-β1 of group A gradually increased to the peak at 14th day after fracture,and then decreased;the expression of VEGF and TGF-β1 of group B is also present from weak to strong and then gradually decreasing in, peak within 14th to 21th days after fracture, but the expression intensity of each period were significantly weaker than group A. Twenty eight days after surgery, for group A,bone callus were seen in 15 limbs (75% of total population) and mixed bone callus (cartilage and bone callus) were 5 limbs (25%). In group B bone callus completely were seen in 6 limbs (30%), mixed bone callus were a total of 14 limbs (70%). In comparison, the two groups differed significantly (P<0.05). **Conclusions**: Seawater immersion injure the osteoblasts in tissues near the broken bone, decrease expression intensity of VEGF and TGF-β1,and then impact the process of cartilaginous ossification and intramembranous ossification with delay in fracture healing.

Key words: Open fracture; Seawater immersion;electron microscopy;Vascular endothelial growth factor;transforming growth factor-β1

ABUALI KAMAL

Graduated in M.D from Shaheed- beheshtee university of medical science • Graduated in MMPH (military master primary health) from Baghiatollah university of medical science • Manager of health department of the Iran police force since 2004 • Membership of the Iranian National Committee of AIDS Prevention & Control • Author of following books: - Mental Health Generalities - Diseases Prevention & control - Psychological tests - Usage of Insecticides & disinfectant Guideline • Author of article titled " evaluation of frequency of HIV,HBV,HCV and risk factors in IDU`s in shafagh camp during 2006-2007 " • Author of article titled " a survey on Ureaase test in identifying H.Pylori infection"

Evaluation of HBS Antibody Levels of Health Personnel in Hospitals of Iran's Police Force Vaccinated against Hepatitis B: 2010

Mehdi Troski

Naja Health department. Health Office

Objective: Police force personnel in hospitals are always at risk of hepatitis B due to repeated exposure to open wounds, needle sticking, direct contact with patients and etc. Thus, Iran's police health authorities vaccinated all employees working in p

AJ BOLAJOKO
Psychosocial determinants of HIV-related quality of life among HIV-positive military in Nigeria

B O Olley, **A J Bolajoko**
45 Nigerian Air Force Hospital
ajbolajoko@yahoo.com

There is a paucity of research regarding the role played by psychosocial and HIV-related factors on quality of life (QoL) among military personnel in developing countries. This work was done on 125 Air Force personnel, 56 sero-positive (none of whom had AIDS) and 69 sero-negative patients. Participants were assessed using the Medical Outcome QoL and other psychosocial measures. The overall QoL was less among sero-positive compared with sero-negative personnel. Sero-positive personnel also reported a greater number of negative life events and trauma symptoms (post traumatic stress disorder, PTSD). Sero-negative military personnel reported more sexual risk behaviours compared with sero-positive personnel. Multivariate analysis showed that trauma symptoms (PTSD) were significant contributors to QoL and explained the variance in physical, mental, role and social functioning among HIV-infected personnel. Other variables that predicted QoL, but to a lesser extent, included age, number of negative life events and increased symptomatology. These findings highlight the importance of evaluation of QoL in HIV-infected military personnel.

Keywords: HIV/AIDS, quality of life, military Nigeria

NURUDEEN HUSSAIN

Col Nurudeen Ayoola Hussain was born on 3 November 1960. He attended the Nigerian Military School Zaria. He holds a Bachelor of Medicine, Bachelor of Surgery (MBBS) degree from University of Ilorin and Masters of Public Health from University of Nigeria. He is a Fellow of both the West African College of Physicians and the National Postgraduate Medical College of Nigeria. He is a trained military logistician and epidemiologist. He was commissioned into the Nigerian Army Medical Corps as a Lieutenant on 4 October 1989 and he served as a Regimental Medical Officer in 5

battalions. He was the coordinator of the Nigerian Army AIDS Control Programme from March 2005 to June 2008 and clinical research officer in the Nigerian Ministry of Defence –US Department of Defense HIV Program from September 2008 to February 2009. He was the Commander of 82 Division Medical Services and Hospital from February 2009 to September 2011. Presently, he is a Chief Consultant Public Health Physician/ Head of Preventive Health Department in Military hospital, Lagos. His major areas of research interest are Health resource management, epidemiology and Emergency/Disaster management. He is married with 3 children.

HIV/AIDS Perception and Sexual Behaviour in a Military Population: Findings of a Focus Group Discussion.

NAAHussain
Commander, 82 Division Medical Services and Hospital

Background: Researchers have identified Behaviour Change Communication (BCC) as an important HIV prevention strategy; especially among uniformed personnel, who are more at risk of contracting it. Focus Group Discussion (FGD) was conducted among soldiers in Abakpa Military Cantonment, Enugu, Nigeria, to assess their HIV knowledge, risk perception and sexual behaviour. **Methodology**: Seventy discussants comprising 7 FGDs selected by multistage sampling technique based on rank, army units and subunits and gender. **Results**: Sixty one (87.1%) discussants described HIV as a disease of chronic morbidity, high mortality, high cost of healthcare with associated discrimination and stigmatization by colleagues. Prolonged deployment of soldiers in ECOMOG peacekeeping (61.4%) and internal security operations (52.9%) were identified predisposing factors to HIV infection. Six female discussants (8.6%) had experienced sexual coercion by their superior. Thirty one (44.3%) discussants consistently used condom in risky sex. Reduced sexual pleasure and messiness were associated factors for low condom use. However, 64 (91.4%) believed that condom use will prevent pregnancy and HIV. Eight discussants (11.4%) believed that HIV can be cured by traditional medical practitioners. Forty one (58.6%) were willing to undergo HIV counseling and testing (HCT). As regards their Sexually Transmitted Infection (STI) treatment seeking behaviour, over two-third (67.1%) of discussants believed in seeking herbal treatment and patronizing patent medicine dealers. **Conclusion**: The discussant's perception of the HIV as a disease of public health importance is high. However, their beliefs in the existence of HIV cure, low condom use, sexual coercion, inappropriate STI treatment-seeking behaviour and low willingness to undergo HCT are militating factors against HIV prevention and control. Thus, there appears to be a gap between their HIV perception and behavioural practices. **Recommendations**: A continuous HIV prevention campaign, short duration of duty by soldiers on foreign and local military operations, condom logistics and its correct use should be emphasized. Also, soldiers should be encouraged to seek HCT and appropriate STI-treatment.

KONSTANTIN ZHDANOV

Colonel Konstantin V. Zhdanov was born 14/02/1968 in Ufa, USSR. In 1985 he entered the Military Medical Academy named after SM Kirov on faculty training doctors for the Missile and the Army. After graduation with honors in 1991 he served at the Department of Infectious Diseases, successively holding posts of associate and senior staff physician, teacher, doctoral student, associate professor, deputy head of the department of clinical work, since 2009 - Head of the department, chief infectious diseases specialist of Defense Ministry of Russia. In 1994 he defended his thesis (PhD) on "Violations of the functional state and health of HIV infection among young people", in 2000 - his doctoral thesis on "The latent forms of viral hepatitis B and C in young adults". In 2004 he was awarded the academic title of the professor. He is famous expert in hepatology. He has experience in providing medical care on mass outbreaks of infectious diseases in combat (Chechen Republic, in 1995, South Ossetia, 2008). He is a member of the International Society of Infectious Diseases, a member of the European Association for the Study of the Liver, a member of the American Association for the Study of Liver Diseases.

Organization of Specialized Care at a Mass Entry of Infectious Patients

K Zhdanov
Saint-Petersburg, Russia

The main reasons of massive influx of infectious patients are natural incidence, fighting, emergency situations and terrorism. The spread of infectious diseases contributes to: specific sanitary-epidemiological situation in the theater of war, migration of the civilian population, insufficiently effective anti-epidemic measures, the dramatic deterioration of socio-economic and sanitary-hygienic living conditions, welfare and human activities, change in their physical and mental condition, natural resistance, and as a consequence - increasing susceptibility to infection. Proportion of infectious diseases in the structure of general morbidity of the Soviet Army in Afghanistan (1980-1988) was from 45.2% to 67.8%, that of the Russian Army in Chechnya (1994-1996) from 14.3% to 31.4%. Health care system to infectious patients in Russian Army includes four stages. The first stage - an active, early detection of infectious cases, prompt isolation, emergency care and timely hospitalization of patients - medical service was carried out military units. The second stage - provision of specialized medical care in military infectious hospitals and infectious departments of multidisciplinary hospitals. The third stage - rehabilitation of convalescents, the restoration of combat in rehabilitation centers. The fourth stage - the dynamic observation of convalescents in the armed forces. Triage at a pre-hospital stage is carried out according to the preliminary diagnosis (group of patients with a primary lesion

of different organs and systems), on severity of the condition and transportability, for an evacuation destination, on the degree of epidemiological risk. At epidemic outbreak of mono-infection, sequence of evacuation depends on the severity of patients: severe patients, taking into account transportability, moderately severe patients and mildly severe patients. At epidemic outbreak of poly-infection: first - serious cases, highly contagious patients, with signs of respiratory damage; second - moderately severe patients, patients with contagious infections with signs of lesions of the digestive system; third - all other categories of patients. Organization of infectious patients reception in hospital include direction to the admission departments, diagnostic department, intensive care department and profile departments.

EDWARD ABAYOMI AKINWALE

Air Commodore Edward Abayomi Akinwale became a Fellow of the Medical Laboratory Science Council of Nigeria in December 1984. He has also obtained a Master of Science degree (MSc.) in Biochemistry from the University of Ibadan and another Master degree in Public Administration (MPA) from the Benue State University Makurdi. He has a Doctor of Philosophy (PhD) in Haematology from the Igbinedion University, Okada, Edo State Nigeria. He was commissioned into the Nigerian Air Force in December 1985 as a flying officer and rose through the ranks to his present rank of air commodore in December 2009. Within this period he has been decorated with the following medals; Forces Service Star (FSS), Meritorious Service Star (MSS), Distinguished Service Star (DSS). He has several scientific publications and also has to his credit the following awards and achievements: Professional & Leadership Merit Award of the Association of Medical Laboratory Scientists of Nigeria, Lagos State Branch - 29 November 2006; Certificate of Achievement presented by the Walter Reed Army Research Institute. Rockville, Maryland U.S.A- 24 June 2008; Produced the 1st 5-star rated Medical Laboratory in Nigeria - The 445 Nigerian Air Force Laboratory Ikeja. Assessment was conducted by the Medical Laboratory Science Council of Nigeria. He is married with 3 children. His hobbies include reading and football.

Accreditation of Military Medical Laboratories In Developing Countries- The Experience of 445 Nigerian Air Force Laboratory, Ikeja Nigeria

Akinwale Edward Abayomi, 445 Nigerian Air Force Hospital, Ikeja, (NIGERIA)

Background: Laboratory accreditation is a process which gives formal recognition to the technical competence of a laboratory to perform specific types of tests. However accreditation of medical laboratories is still alien to most developing countries, the military inclusive. According to WHO-AFRO, only 340 laboratories have international accreditation in Africa. Out of this, 312 (91.8%) are in South Africa while the remaining 28 (8.2%) are scattered in Sub-Saharan Africa. Moreover, out of the 312 accredited laboratories in South Africa, 282 (90.4%) are from the private sector while only 30(9.6%) are from the public sector, including the military. In 1985, the 445 Nigerian Air Force (NAF) Hospital had a 33-room stand alone medical laboratory. With its selection as one of the 4 pioneer sites of the Nigeria Ministry of Defence (NMOD)-US Department of Defense (USDOD) program in 2004, the upgrading of infrastructure, human capacity building, additional equipping of the laboratory made it the bedrock of the NMOD-USDoD program. The NAF has been able to build on this to produce the first 5-star accredited Laboratory in Nigeria. **Objective:** The objective of this paper is to share experiences gained in nurturing a military medical laboratory to 5-star accreditation in a developing country. **Challenges:** Some of the challenges encountered in nurturing 445 NAF Hospital Laboratory Ikeja towards 5-star accreditation include issues of quality management system and good laboratory practices among laboratory staff, low level of documentation culture, attitudinal issues, manpower retention, scheduled equipment maintenance and financial constraint. **Lessons Learned:** Management commitment and good staff morale are paramount to a successful implementation of quality assurance and eventual accreditation of any laboratory. The WHO-AFRO accreditation scheme encourages stepwise improvement towards accreditation and is therefore suitable for laboratories in developing countries especially in resource constraint settings. **Conclusion:** The shared experience of the 445 Nigerian Air Force Laboratory, Ikeja, Nigeria in the journey to 5-star status should stimulate and encourage other laboratories in developing countries especially in the military to embark on this journey of quality.

ABOLFAZL DASHTBANI

Use of Real-Time Loop- Mediated Isothermal Amolification (Lamp) Method for Quantitative Detection of Toxigenic V. Cholerae

Mohammad Soleimani, Keivan Majidzadeh, **Abolfazl Dashtbani**, Abbas Morovvati
Tasnim Biotechnology Research Center, AJA University of Medical Science, Iran, Tehran

Background and Objectives: Epidemics of cholera and its potential use as a bioweapon have emphasized the urgent need for rapid and reliable detection methods for *Vibrio cholerae*. PCR and real time PCR are neither simple nor cost effective. LAMP is a simple gene amplification method which

can be performed at a single temperature. We aimed to develop a quantitative real-time LAMP assay based on *ctxB* gene of *V. cholerae.* **Materials & Methods:** A set of four primers were designed and the LAMP reaction was set up and optimized. Amplification results were assessed by obtained real time turbidity graphs from each LAMP reaction tube using real time turbidimeter apparatus. Standard curve was generated from turbidity graphs corresponding to ten-fold serial dilutions of *ctxB* gene. **Result:** Only *V.cholerae* isolates were positive by LAMP assay, whereas no amplification was obtained with non-*V.cholerae* isolates, indicating 100% specificity. The limit of detection (LoD) of our LAMP assay was found to be ~ 82 copies of *ctxB* gene per reaction. Analysis of the standard curve revealed excellent linear correlation between gene copy number and time threshold. It showed that the more concentration a sample is, the sooner it will reach the threshold of turbidity. **Conclusion:** Real-time LAMP could be used for determination of *V.cholerae* load in a reaction tube. Because LAMP assay is a rapid, simple, cost-effective, sensitive, and specific method for detection of toxigenic *V.cholerae*, this technique has the potential for application in epidemiological studies and biodefence.
Keyword: real time LAMP, detection, *ctxB gene*, *Vibrio cholerae*

CHUKWUEMEKA UGWUADU

Born in Lagos, Nigeria 08 Aug 1957; Early Education - Methodist Primary School, Surulere, Lagos (1963-71); King's College, Lagos (1972-76); Faculty of Medicine, University of Nigeria (MB. BS. 1976-82); Residency Training - Haematology & Blood Transfusion – LUTH (FMCPath); MSc Haematology - UNILAG. NYSC - 23 Armoured Brigade Field Ambulance, Bauchi (1983-84); Medical Officer II, Imo State HMB (1984-85); UnderTraining Officer - Naval College, Onne PH, Nigeria. Commissioned Lieutenant (NN) - 1986; Medical Officer - Malu Road Medical Centre; Base Medical Officer - NNS Okemini & NNS Anansa; Fleet Medical Officer - NIGCON ECOMOG Monrovia (1991). Commander, Defence HQ Medical Centre (2005-09); Secretary General PACMM (2009-Date). Member of the Nigeria Medical Association, Nigerian Society for Haematology and Blood Transfusion, Fellow, Nigerian Postgraduate Medical College of Pathology; Patron of the Defence Health Club, Abuja; Married with 3 children.

Evaluation of Some Haemostatic Parameters Among HIV Infected Nigerians At The Lagos University Teaching Hospital.

C.S. Ugwuadu, A.S. Akanmu, T.A. Adeyemo
Pan-African Committee of Military Medicine, Defence Headquarters, Abuja, (NIGERIA)

Background: HIV infection is sometimes associated with a variety of haemostatic complications which pose additional challenges to patient management. There is thus the need to evaluate some haemostatic parameters among HIV infected persons. **Subjects and Methods:** This was a cross sectional study. There were 3 arms of subjects: HIV infected patients on Antiretroviral treatment (H-arm), HIV treatment naïve patients who were recruited in a non-random consecutive selection of clients attending the Adult HIV clinic at LUTH (HN- arm) and a control arm , (C-arm) with subjects recruited from volunteer medical students and staff of the haematology department. The Prothrombin Time (PT), activated Partial Thromboplastin Time (aPTT) and Thrombin Clotting Time (TT) were determined by standard methods. Other tests were Platelets count, Fibrinogen Level estimations by Clauss method, haematocrit and CD4 cells counts. Results: There was no significant difference in the mean PT (secs) (16.2±5.5, 16.7±2, 17.1±2.2, p =0.42), aPTT (secs) (41.7±9, 40.1±5.8, 40.02±4.98 p = 0.4) and Fibrinogen levels (mg/dl) (284.45±98, 292.64±52.7, 279.8±45.49 p = 0.74) among the 3 study arms. The mean TT for subjects in the 2 HIV infected arms of the study (H (13.03±3 secs) and HN (12.3±2.5 secs)) were significantly longer than for C arm. (9.79±0.9 secs) $F = 28.43$, $p < 0.01$. The mean platelets count (x109/L) for HIV infected persons on treatment (183.3±67.7) was significantly lower than for those HIV infected persons who were not on treatment (241±86.9) and controls (216.8±78.9). $F = 7.5$ $p<0.01$. However there was no significant difference in the mean platelets counts between the C and the HN arm. $P>0.05$.**Conclusion:** Thrombocytopaenia is an uncommon presentation of HIV/AIDS among our subjects. Antiretroviral drugs may be a cause of reduced platelets count in HIV infected Nigerians**.**
Keywords: Haemostatic parameters; HIV infection; Antiretroviral treatment.