



4th International Congress on

Infectious Diseases

May 11-12, 2017 Barcelona, Spain

Scientific Tracks & Abstracts Day 1

Infection Congress 2017

Sessions

Day 1 May 11, 2017

**Infection and Immune System | Pediatric infections | Foodborne & Waterborne Illnesses
Infection Control and Epidemiology | New Opportunities for Tuberculosis Control | Host and
Microbial Genetics**

Session Chair

Imran Khan

University of California, Davis, USA

Session Co-Chair

Walter Fierz

Labormedizinisches zentrum Dr Risch, Liechtenstein

Session Introduction

Title: Interaction between viruses and the immune system: A pathogenic role for HHV-6A, EBV, and the complement system in Multiple Sclerosis and Age-Related Macular Degeneration? Two hypotheses.

Walter Fierz, labormedizinisches zentrum Dr Risch, Liechtenstein

Title: The EU public health impact of *Campylobacter* spp. human infection and the EU control strategy in the poultry meat sector

Maurizio Ferri, Società Italiana di Medicina Veterinaria Preventiva, Italy

Title: Lower activation-induced T-cell apoptosis in 2nd infection of hetero-serotype dengue virus

Jintao Li, Institute of Tropical Medicine, Third Military Medical University, China

Title: Infection and colonization due to *Achromobacter xylosoxidans* in an Intensive Care Unit : Role of endoscopes

Zoher Kadi, CCLIN Paris Nord, France

Title: Antibiotic-impregnated central venous catheters for the prevention of catheter-related bloodstream infection in children: A meta-analysis

Vaneza Leah Espino, UP-Philippine General Hospital, Philippines

Title: Cell-cell communication between *Plasmodium* and host innate immune via exosomes

Yifat Ofir-Birin, Weizmann Institute of Science, Rehovot, Israel

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Interaction between viruses and the immune system: A pathogenic role for HHV-6A, EBV, and the complement system in multiple sclerosis and age-related macular degeneration; Two hypotheses

Walter Fierz

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Many microorganisms use a survival strategy based on their interference with the immune system. Some viruses are able to do so by docking to receptors on host cells that are important for proper functioning of the immune system. A well-known example is HIV that uses the CD4 cell surface molecule to enter host lymphocytes and thereby attacking the immune system. A more complicated example is seen in multiple sclerosis (MS) where human herpes virus-6A (HHV-6A) infects astrocytes by docking to the CD46 molecule. Such HHV-6A infection has recently been postulated to enable Epstein-Barr viruses (EBV) to transform latently infected B-lymphocytes leading to the well-known phenomenon of oligoclonal immunoglobulin production and cellular immune response to HHV-6A and EBV as part of pathogenic mechanisms in MS. A more subtle pathogenic mechanism can be seen in the down-regulation of CD46 on astrocytes by the infecting HHV-6A. Since CD46 is central in regulating the complement system, a lack of CD46 leads to hyper-activation of the complement system. In fact, activation of the complement system in brain lesions is one of the pathogenic mechanisms in MS. It is postulated that a similar mechanism is central in the development of age-related macular degeneration (AMD). One of the earliest changes in the retina of AMD patients is the loss of CD46 expression in the retinal pigment epithelium (RPE) in the course of geographic atrophy. Furthermore, CD46 deficient mice spontaneously develop dry-type AMD-like changes in their retina. It is also well known that certain genetic polymorphisms in the complement-inhibiting pathways correlate with higher risks of AMD development. The hypothesis is that HHV-6A infection of the retina leads to down-regulation of CD46 and consequently to hyper-activation of the complement system in the eyes of susceptible individuals.

Recent Publications

Fierz W (2017) Multiple sclerosis: An example of pathogenic viral interaction? *Viol. J* 14:42.

Biography

Walter Fierz is a Clinical Immunologist and completed his basic training in Cellular Immunology with experimental work at Transplantation Immunology Unit of the Clinical Research Center in Harrow, London (UK) and at Max-Planck-Society working group for multiple sclerosis research in Würzburg (Germany). He completed his Master's Degree in Health Information Management (MHIM) at Erasmus University in Rotterdam, Netherlands.

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The EU public health impact of *Campylobacter* spp. human infection and the EU control strategy in the poultry meat sector

Maurizio Ferri

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Campylobacter is the leading cause of zoonotic enteric infections worldwide and the most frequent foodborne pathogen in the European Union (EU). Due to a significant increasing trend of human cases in the EU Member states over the last eight years, *Campylobacter* is becoming a serious public health problem with associated economic cost and have drawn a great attention of the EU decision-makers. Epidemiological studies and molecular subtyping investigations have identified poultry as main reservoir of *Campylobacter* and poultry meat as a major source of human infection. Among the different control measures to reduce the prevalence of the pathogen throughout the broiler farm-to-fork continuum and the incidence of human infection, the adoption of a food microbiological criteria to be applied at slaughter and decontamination treatment of poultry carcasses have seriously been considered by the EU Commission. The presentation provides an overview of the etiology, epidemiology and newly proposed control options of *Campylobacter* in the broiler meat chain as proposed by EFSA and highlights the public health importance of the un integrated and holistic approach according to one health concept to reduce the pathogen prevalence starting at poultry farm level followed by further measures later in the poultry chain and to reduce the human incidence. In addition, the need to streamline awareness campaigns aimed to prevent unhygienic practices and food cross-contamination at consumer's home is underlined.

Biography

Maurizio Ferri has more than 22 years of professional experience in the field of Veterinary Public Health and Food Safety. He performed EU assessment missions and delivered TAIEX training in Food Safety, and Veterinary Public Health. He has gained broad experience in evaluating Food Safety Microbiological Risk and completed his training on Quantitative Microbial Risk Assessment (QMRA) at University of Maryland, USA. His new research area focuses on "Use of data mining, network analysis tools for food safety, political and regulatory environment for sharing food pathogens genome sequences.

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Lower activation-induced T-cell apoptosis in 2nd infection of hetero-serotype dengue virus

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The available evidence suggests that dengue virus-specific T lymphocytes and cytokine storm play a pivotal role in the immunopathogenesis of plasma leakage. Investigations are underway to identify the immune profiles associated with increased or decreased risk for severe disease. In this study, CD14⁺ cells from the peripheral blood mononuclear cells (PBMCs) of patients who recovered from DENV-1 infection were infected with DENV-1 or DENV-2 and co-cultured with memory T cells. We found that secondary infection with DENV-2 suppresses the cell reproductive capacity but forms more cell clones and more functional cells to produce more pro-inflammatory factors (IFN- γ , TNF- α , IL-6, IL-8, IL-12 and IL-17) and less regulatory cytokines (IL-10, TGF- β) which results in higher viral replication compared to secondary infection with DENV-1. Memory dengue virus-specific T cells which are induced in a primary dengue virus infection are reactivated by the heterologous serotype of dengue virus and antigen-presenting cells (APCs) during a secondary infection. Dramatically, less apoptosis and more continuous activation of T cells in secondary infection with hetero-serotype DENV were observed. This discovery which has not been reported previously may be the reasonable and vital interpretation for the cytokine storm and severe symptoms observed in secondary infection with DENV. In summary, secondary infection with hetero-serotype DENV elicits the relatively pathological immune response while secondary infection with homologous-serotype DENV induces the relatively protective immune response by activation-induced cell death (AICD) of T cells.

Biography

Jintao Li is a Professor, Director and Principle Investigator in Department of Tropical Pathogens and Epidemiology, Institute of Tropical Medicine, Third Military Medical University (TMMU). She completed her Master's Degree in Molecular Biology at Biotechnology Centre, Southwest University in 1996 and then became a Faculty in Genetics department, TMMU. She completed her PhD at Immunology Institute, PLA, TMMU in 2000 and became an Associate Professor and then Professor. From 2011-2012, she worked in Canada as a Visiting Scientist for one year. Now, she has published more than 100 academic papers in journals such as *Science Translational Medicine*, *Journal of Immunology* and *European Journal of Immunology*.

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Infection and colonization due to *Achromobacter xylosoxidans* in an intensive care unit: Role of endoscopes

Zoher Kadi², Bénédicte Nguon¹, Jack Richecoeur¹, Danielle Combeaux¹, Edith Baticle¹ and Noëlle Vidal¹¹Beauvais Hospital Center, France²CCLIN Paris Nord, France

Background & Aim: In 2015, our hospital acquired infection (HAI) surveillance system detected unexpected and rare pulmonary infections and colonizations due to *Achromobacter xylosoxidans* (Ax) among patients hospitalized in the intensive care unit (ICU) of our 600-bed hospital. A pulmonary endoscopy had been performed on most of those patients. In order to break the transmission chain, we conducted an investigation to identify the potential source for the infections.

Material & Methods: A case definition was completed and all medical records of cases were reviewed with the ICU medical staff. Audits were conducted on endoscopy procedures, hand hygiene compliance (HHC) and laboratory procedures. In addition to that, an audit was carried out to assess the safety level of endoscopes disinfection procedures. Samples were obtained from the ICU environment (water, antiseptics and surfaces) in addition to samples of all the endoscopes used during the concerned period. Ax strains were sent to the National Reference Laboratory. Finally, a case-control study aiming to find risk factors was conducted.

Results: Between 09/2013 and 08/2014, six infections and 10 colonizations were diagnosed. All environmental samples were negative for Ax, but samples taken from the sinks and taps were positive for *Pseudomonas aeruginosa*. The samples of endoscopes, antiseptics and surfaces were all negative. The HHC audit revealed poor compliance among health care workers. The case-control study clearly showed that an endoscope was associated with the presence of Ax ($p < 10^{-3}$).

Conclusion: After removal of this endoscope, no further cases were diagnosed. In this outbreak, no Ax strain was isolated from the endoscopes or in the ICU environment and the case-control study was critical in ending the episode. This study therefore showed the importance of obtaining reliable data to conduct the case-control study and the need for good traceability of these data.

Biography

Zoher kadi is currently working as an expertise in Picardie regional center for nosocomial infections control. She has published numerous research papers and articles in reputed journals and has various other achievements in the related nosocomial studies. She has extended his valuable service towards the scientific community with his extensive research work.

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Antibiotic-impregnated central venous catheters for the prevention of catheter-related bloodstream infection in children: A meta-analysis

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Background: Use of central venous catheters (CVCs) ensures stable access in critically ill patients but is associated with increased infection rates. CVC with antimicrobials has been recommended for infection reduction in adults. A review of antibiotic-impregnated CVCs' usefulness in children is needed.

Aim: Aim of this study is to determine the effectiveness of antibiotic-impregnated CVCs in reducing infection in children.

Search Methods: Extensive search of MEDLINE, Cochrane Database of Systematic Reviews and Cochrane Register of Controlled Trials, Clinicaltrials.gov and Google scholar was done for trials published until June 2016. Reference lists from retrieved journals were checked for relevant articles.

Selection Criteria: RCTs evaluating antibiotic-impregnated was compared with standard CVCs for reducing infection in children.

Data Collection and Analysis: Two authors assessed trial quality and extracted data. Statistical analysis was done using Review Manager with fixed or random effects model. Outcomes were: Bloodstream infection, hypersensitivity, thrombosis, mortality, site infection, length of ICU and hospital stay. Dichotomous data were presented as risk ratios (RR), continuous data as mean differences with 95% confidence intervals (CIs).

Results: Two low quality trials (n=1773) were analyzed showing non-significant reduction of bloodstream infection in the antibiotic-impregnated group compared to standard catheters (RR 0.49; 95% CI 0.23-1.02, I²=0%) with no increased risk of thrombosis (RR 1.04 95% CI 0.84-1.28, I²=0%). No statistical difference was seen in the duration of ICU and hospital stay.

Conclusions: The use of antibiotic-impregnated CVCs cannot be recommended at this time. Decision of its use will depend on the clinical judgment after consideration of the costs and benefits. More RCTs are needed to reinforce the evidence.

Biography

Vaneza Leah Espino is a pediatrician who recently completed her 3-year residency training at the Philippine General Hospital (PGH), one of the premier training institutions in the Philippines, and plans to pursue further training in Pediatric Intensive Care. The PGH caters to a large volume of patients from all parts of the country with illnesses ranging from the most common to the rarest and complicated. This challenge is often faced by being a resourceful, disciplined and efficient health care provider. Her training has molded her to be in a continuous pursuit to provide premium health care for every Filipino child despite limitations in resources. The review aims to provide evidence to decrease infection rates in the critically ill and to provide a spring board towards the development of similar trials for the pediatric population that may offer recommendations to be implemented in tertiary hospitals of developing countries.

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Cell-cell communication between *Plasmodium* and host immune via exosomes

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Malaria, kills up to a million people each year, is caused by the protozoa of the genus *Plasmodium falciparum* (Pf). These vector-borne parasites cycle between mosquitoes and humans and, in both contexts, are faced with an unstable and hostile environment. To ensure survival and transmission, the malaria parasite must infect and survive in the human host and differentiate into sexual forms that are competent for transmission to mosquitoes. We found for the first time that Pf-infected red blood cells (iRBCs) directly exchange cargo between them using nano-vesicles (exosomes). These tiny vesicles are capable of delivering protected genes to target cells. Cell-cell communication is a critically important mechanism for information exchange that promotes cell survival. How Pf parasites sense their host environment and coordinate their actions remain one of the greatest mysteries in malaria. Moreover, our understanding in the mechanism regulate human immune response to malaria infection is poor. Here, we found that malaria-derived exosomes carry remarkable cargo providing a secure and efficient mode for signal delivery. We developed an exosomes tracking assay and could measure Pf exosomes uptake by different cell types. Moreover, although early life-stages of Pf-iRBC are considered immunologically inert, our initial observations show that ring-stage derived exosomes are immunogenic. We show that exosomes can specifically activate and induce pro-inflammatory responses, resulting in interferon type I response. This is a new area of malaria research which may shed a light on the ability of malaria parasite to manipulate their host response.

Biography

Yifat Ofir-Birin is pursuing her Post-doctorate Degree at Dr. Neta Regev - Rudzki's lab. She is leading an area of research which focuses on "Intercellular communication between malaria parasites and its human host via extracellular vesicles, exosomes". During 2013-2015, She was a Senior Scientist at Evogene R&D while leading an innovative research team in order to find new genes which improve crops traits. She completed her PhD thesis under the supervision of Professor Ehud Razin. Her thesis demonstrates "The structure and function of the Ap4A-LysRS-MITF pathway in mast cells."

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Workshop

Day 1

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Ashok Rattan

Pathkind Diagnostics Pvt Ltd, New Delhi, India

Nitrofurantoin sensitivity pattern for uropathogens pan India

The prevalence of urinary tract infections (UTIs) varies from 21.8% to 31.3% in various parts of the country. The most common pathogens causing UTIs in the descending order of their prevalence include *Escherichia coli* (45.12%), *Klebsiella* spp. (18.17%) and *Enterococcus* spp. (9.23%). Nitrofurantoin was categorized as an A-I antibiotic for treating UTIs as per the IDSA guidelines, while nitrofurantoin 100 mg tablet dosage form was added to the WHO model list of essential medicines since 2013. The major strength of nitrofurantoin is its action at multiple sites and levels which helped the drug to maintain an excellent level of sensitivity over six decades of clinical practice besides being well tolerated for treating acute uncomplicated cystitis. In this review, we analyze, from all the recent accessible and available clinical studies, nitrofurantoin sensitivity pattern across various parts of India, while also comparing it with the sensitivity of other commonly used antimicrobials. We have found that not only nitrofurantoin has retained excellent sensitivity to the most common uropathogens across India, but also stands out to be the antimicrobial of choice when considering other parameters like oral route of administration, safety profile and cost-effectiveness in the management of UTIs.

Biography

Ashok Rattan has expertise in Microbiology, Immunogenetics and Molecular Biology and holds important positions in academics (JN Medical College, Aligarh; AIIMS, New Delhi; Sharjah Medical College and Mahatma Gandhi Medical University, Jaipur); in industrial research (Ranbaxy New Drug Discovery and Fortis Clinical Research Ltd) and in Diagnostic labs (Religare SRL Diagnostics and Star Metropolis). He has published over 100 research papers in peer reviewed international journals. He has contributed more than a dozen chapters in different books and has conducted workshops on WHONET in all nine SEARO countries..

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Scientific Tracks & Abstracts Day 2

Infection Congress 2017

Infection Control and Epidemiology | New or Rapid Diagnostics | Infection and Immune System | Nosocomial Infections | New Opportunities for Tuberculosis Control

Session Chair

Ashok Rattan

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Session Introduction

Title: Disease biomarkers for studies on tuberculosis (TB) and TB diagnostic applications

Imran Khan, University of California, Davis, USA

Title: Characterization of phosphate transporter(s) and understanding their role in *Leishmania donovani* parasite

Ambak Kumar Rai, Motilal Nehru National Institute of Technology, India

Title: Cholera outbreak among Residents of Bunyala in Busia County 2016

Oscar Guanya, Busia County Referral Hospital, Kenya

Title: Depression improvement among patients with HIV and endocrine dysfunction after hormone therapy

Fereshteh Ghasvand, Tehran University of Medical Sciences, Iran

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Disease biomarkers for studies on tuberculosis (TB) and TB diagnostic applications

Imran H Khan

University of California, Davis, USA

Approximately, two billion people worldwide are infected with *Mycobacterium tuberculosis* (Mtb), the etiologic agent of tuberculosis (TB). A tenth of the infected individuals develop active disease. Active pulmonary TB is an inflammatory disease and is increasingly viewed as an imbalance of host immune responses to Mtb infection. The current frontline diagnostic methods including sputum smear (SS) microscopy and X-ray are insensitive, inefficient, cumbersome or too expensive. The most widely used test, SS microscopy (WHO standard) test has a low sensitivity. Therefore, there is an urgent need for low cost, efficient, high-throughput and accurate diagnostic approaches. We have developed multiplex antibody biomarker based TB diagnostic system. Data from proof-of-concept and subsequent field studies have shown that this approach will enable a scalable, flexible and cost effective model for diagnostic applications. In addition, we have published 10 plasma cytokine/chemokine biomarkers representing host immune-responses in TB patients, are not only gender biased but concentrations of some of these biomarkers (e.g., IP-10, MIG, IL-16, IFN- α and G-CSF) progressively decreased in patients which responded to anti-tuberculosis treatment (ATT) with a cocktail of several drugs (isoniazid, rifampin, ethambutol, and pyrazinamide or streptomycin-WHO standard). These decreases strongly correlated treatment success and can be used for monitoring efficacy of therapy. This is important because ATT is a drawn out process (at least six months), and early detection of patients who may not respond to therapy is important. One possible reason for not responding to ATT could be due to infection with multi-drug resistant (MDR) strain of Mtb. The standard culture based drug sensitivity testing can take several weeks. Therefore, there is a need for rapid molecular tests. A test, based on multiplex gene amplification (multiplex PCR), of several Mtb genes involved in drug resistance, and multiplex detection of the relevant gene mutations to detect resistance against four TB drugs will also be discussed.

Biography

Imran H Khan completed his PhD in Molecular and Cellular Biology at Albert Einstein College of Medicine, USA. His research program has focused on "Infectious diseases, intracellular signaling pathways, molecular biology" for over 15 years. Since 2002, he has worked on developing highly efficient and high throughput multiplex approaches for infectious disease biomarkers (e.g., tuberculosis). His research includes simultaneous analysis of multiple key components of cell signaling pathways in a single reaction vessel. In addition, he has employed novel approaches to study disease related biomarkers (e.g., immune biomarkers) in bodily fluids (e.g., plasma/serum) by combining the power of multiplexing systems and computational modeling. Results of his research have been published in peer reviewed journals for the development of novel methods in biomarker profiling for cancer, inflammatory diseases and infectious diseases.

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Characterization of phosphate transporter(s) and understanding their role in *Leishmania donovani* parasite

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Motilal Nehru National Institute of Technology, India

Statement of the Problem: Inorganic phosphate (Pi) is shown to be involved in excretion of methylglyoxal (MG) in the promastigote form of *Leishmania donovani* parasite. Absence of Pi leads to its accumulation inside the parasite. Accumulation of MG is toxic to the parasite and utilizes glyoxalase as well as excretory pathways for its detoxification. In addition, Pi is also reported to regulate activities of ectoenzymes and energy metabolism (glucose to pyruvate) etc. Thus, it cumulatively affects growth of the parasite. Therefore, the transporters which allow the movement of Pi across the membrane can prove to be a crucial drug target.

Methodology & Theoretical Orientation: Bioinformatics analysis approach was applied to identify the phosphate transporters in *L. donovani*. Phylogenetic analysis as well as secondary structure prediction was performed for its characterization. We tried to understand the secondary structure of these two proteins and confirm modulation in their expression with the change in Pi concentration outside. We also tried to detect the expression quantitatively in a log phase culture of promastigote and under various physiological conditions. Moreover, their modes of action were also measured in presence of different inhibitors (LiF, CCCP).

Findings: We first characterized two phosphate transporters in *Leishmania*: H⁺ dependent myo-inositol transporter PHO84 and; Na⁺ dependent transporter PHO89 based on similar studies done previously on other lower organisms and trypanosomatids. We found significantly higher expression of H⁺ dependent transporter (LdPHO84) as compared to Na⁺ dependent transporter (LdPHO89). We also inhibited the Na⁺ as well as H⁺ gradient and then confirmed their involvement in the Pi transport across the membrane.

Conclusion & Significance: We thus functionally characterized two phosphate transporters of *L. donovani* and its regulation by extracellular Pi for the first time. These computational results offer the possibility of identifying novel compounds which inhibit the transport of Pi across the membrane.

Biography

Ambak Kumar Rai is an Assistant Professor in Department of Biotechnology at Motilal Nehru National Institute of Technology (MNNIT) Allahabad, India. He has his expertise in "Understanding the molecular and biochemical aspects of drug resistance in *Leishmania donovani*". A detailed approach to understand the drug unresponsiveness offers new possibilities for therapeutic advancement. He is also inclined to understand the immuno-regulatory aspects of *Leishmania* pathogenesis.

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Cholera outbreak among residents of Bunyala in Busia county 2016

Oscar Gaunya

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Background: Cholera is an acute enteric infection caused by the bacterium *Vibrio cholerae* of sero-groups 01 or 0139. It is water borne disease of public health importance with an estimated number of three to five million cases annually and 100,000 to 150,000 deaths yearly. Outbreaks are linked to consumption of unsafe water and food, poor hygiene and sanitation. Overflowing of latrines and contamination of wells and surface water, seasonal modification of water sources for consumption and human behavior may play a role in the occurrence of cholera outbreaks. Failure to control local outbreaks and prevention of between-region transmission could result in spread of cholera outbreaks to neighbouring regions or countries. The latest cholera outbreak in Bunyala Busia county is dated between 21st February to 11th March 2016. Though on the 1st January 2017, there were five confirmed cases reported in Uganda (Lumino village) who sought treatment at our County Referral Hospital Busia being at the boarder & then later transferred back to Uganda for further management. Cholera is one of the three diseases requiring notification to WHO under the International Health Regulations.

Aim: Aim of this study was to describe cholera outbreak by time, person and place.

Methodology: We conducted retrospective analysis of line lists obtained from county disease surveillance coordinator in Busia county. Data was analyzed using Microsoft Excel 2010.

Results: In 2016, 52 villages in Bunyala sub-county and one village in Samia sub-county reported cholera outbreaks with a total of 107 cases including six deaths. This gave an overall case fatality rate of 5.6% exceeding the mean CFR of 1% which is acceptable by WHO. Out of the 53 villages, Khainga recorded the highest number of cases nine (8.4%), Lunyofu six (5.6%), Siginga six (5.6%) and Khukunda five (4.6%). The age specific attack rate was highest among individuals 14 years of age and above 62 (58%), 5-14 years 32 (29%) and below five years at 13 (12%). Females were the most affected than males at 59 (55%) and 48 (45%) cases respectively. The epidemiological curve showed peaks on the 4th Feb (18 cases) and 6th (10 cases).

Conclusion: Our study showed a cholera outbreak that grew in magnitude and spread to involve Bunyala North, West and Magombe central in Bunyala sub-county. It also showed potential endemicity of cholera in the villages bordering water bodies i.e., Khainga, Siginga, Lunyofu and Khukunda. Therefore, there is a need for a harmonized, coordinated approach to cholera outbreaks through effective surveillance and response with emphasis on training and motivating frontline healthcare workers towards timely detection and response as well as proper documentation.

Biography

Oscar Guania is an expertise in emerging infectious diseases department working in Busia County Referral Hospital, Kenya

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The effect of green tea extracts supplementation on weight changes, serum malondialdehyde and blood iron indices in pulmonary TB patients: A randomized controlled trial

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²Iran University of Medical Sciences, Iran

High prevalence of TB in Golestan Province in north of Iran motivated us to use supplementation with green tea extract to promote healing. The aim of this study was to investigate the effect of green tea consumption on weight changes, iron status and improving process of pulmonary tuberculosis treatment. This double-blinded randomized clinical trial study was conducted on patients with TB, who were assigned randomly to the green tea group (41 patients) receiving 500 mg catechin of green tea extract and the control group (39 subjects) receiving placebo for two months since the beginning of concomitant anti-TB treatment. Height and weight were measured at first and two and six months thereafter. Demographic, food frequency questionnaires and 24-hour dietary recalls of three non-consecutive days were completed. After obtaining 10 ml of venous blood, hemoglobin (Hb), transferrin, ferritin, total iron binding capacity (TIBC), iron and serum malondialdehyde (MDA) were measured in the beginning and the end of the study. Data were processed using independent and paired t-test, McNemar, Wilcoxon, Kaplan-Meier, Log-rank test Cox regression model and Nutrition 4 software. At the beginning of the survey, two groups were similar according to age, gender and clinical status ($p > 0.05$). Average daily energy intake of patients was 1518 ± 434 kcal, distribution of which was as follow: Carbohydrates 58%, protein 17% and fat 22%. Vitamin D and Zinc intake of patients were less and iron intake was higher than the DRI. Weight changes in both groups of placebo and green tea had tendency of increase with a significant difference at two and six month follows ups ($p = 0.0001$). However, there were no significant changes due to intervention compared to placebo. ANCOVA test showed mean difference level (P value) in both groups for Hb, iron, TIBC, transferrin and ferritin as of: 0.004, 0.56, 0.65, 0.38 and 0.16, respectively which means that increase of hemoglobin in the green tea group was significant compared to the placebo group. There was just a 9.2 nmol/ml difference between the two groups for MDA in the beginning of study, which was not statistically significant ($p = 0.078$) whereas, it was increased to 24.8 nmol/ml after the intervention, indicating a significant difference ($p < 0.001$). The decline value was estimated -45.45 ± 14.69 nmol/ml for catechin group and -19.91 ± 18.38 nmol/ml for placebo group. In conclusion, green tea as an adjuvant to TB treatment can reduce MDA concentration and improve hematopoiesis and hemoglobin level, but no significant effect on weight gain compared to placebo group.

Biography

Shahryar Eghtesadi completed his Bachelor Degree in Nutrition Science and Food Chemistry in 1975, at Shahid Beheshti University of Medical Sciences, Tehran; MSPH Degree in Nutrition in 1977 at Tehran University of Medical Sciences, Tehran and PhD in Nutrition in 1985 at University of California at Davis (UCD), USA. He served as Visiting Scientist in USDA Human Nutrition Research Center on Aging (HNRC), Boston, USA (1994-1995); Full Professor of Tabriz, Iran and Tehran University of Medical Sciences and currently serves as Professor of Azad University, Science & Research Branch. He was the Chair of Departments of Nutrition and Biochemistry, Biochemistry & Clinical Nutrition, Public Health Nutrition and Nutrition at aforementioned universities. He served as an Associate Dean and Dean of School of Public Health & Nutrition and School of Public Health of Tabriz and Iran University of Medical Sciences respectively. He has published numerous peer reviewed articles in journals and also edited several books and finally served as Principal Investigator of World Bank Project for Capacity Building in Nutrition in Iran.

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Depression improvement among patients with HIV and endocrine dysfunction after hormone therapy

Fereshteh Ghiasvand, Ladan Abbasian, Afarin Rahimi-Movaghar, Alireza Esteghamati, Mehrdad Hasibi and Nahid Zakerzadeh
Tehran University of Medical Sciences, Iran

Background: Endocrine diseases are common among men living with HIV (MLWH) known as curable etiology of depression. Depression impedes adherence to treatment and perceived quality of life.

Aim: The objective of this study was to evaluate depression after medical treatment of underlying endocrine diseases among Iranian MLWH.

Materials & Methods: We recruited a convenient sample of 296 MLWH at a referral HIV clinic from April 2013 to March 2014. In phase I (cross-sectional evaluation), all patients were interviewed using the beck depression inventory (BDI- II) questionnaire. In phase II, participants with moderate to severe depression (n=110, scores ≥ 21) were evaluated for endocrine diseases (evaluations: total testosterone, triiodothyronine, thyroxine, thyroid stimulating hormone, luteinizing hormone, follicle stimulating hormone and serum cortisol). 11 patients diagnosed with hypogonadism were finally considered for hormone replacement therapy. We re-evaluated changes in depressive symptoms with BDI-II.

Results: From 237 participants, 136 (75%) had BDI scores ≥ 21 ; 110 participated in the endocrine evaluations. Secondary hypogonadism (total testosterone ≤ 2.8 nmol/l; LH, FSH: normal) was the only observed abnormality in 10% (n=11) of the patients and hormone replacement was prescribed to seven of them for three months. All patients were re-evaluated for depression; significant changes were observed in final scores (p=0.027).

Conclusions: Evaluation and treatment of hypogonadism can help clinicians to reduce or control depression among people living with HIV; hence improving treatment compliance and patient outcomes.

Biography

Fereshteh Ghiasvand is an Assistant Professor of Infectious Diseases department at Tehran University of Medical Sciences.

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