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Joint Event on 2nd World Congress on
Infectious Diseases

&

International Conference on

Pediatric Care & Pediatric Infectious Diseases

August 24-26, 2016 Philadelphia, USA

Workshop (Day 1)



Infectious Diseases 2016

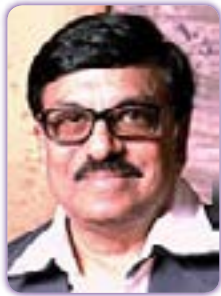
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**Ashok Kapse**

Mahavir Super Specialty Hospital, India

Dengue diagnosis and case management

Right up to the mid twentieth century dengue was considered as a mild febrile illness; however in the mid 1950 image of dengue underwent a drastic change. South East Asian countries experienced epidemics of a serious dengue disease, later on termed as Dengue hemorrhagic fever-dengue shock syndrome. By the end of the last century the geographic distribution of dengue viruses which earlier was limited to South East Asian and South Asian countries, has tremendously expanded & engulfed almost whole of the world. Today dengue has emerged as an important threat to public health worldwide; it is estimated that over 50 million dengue virus (DENV) infections occur annually resulting in 500,000 hospitalizations and over 20,000 deaths. In 1974 World Health Organization (WHO) formulated case definition and classified dengue into DF/DHF/DSS. This classification remained in use for almost three decades however over the years dengue has expanded to different parts of the globe and to older age groups. Clinicians often observed deviations from the original description of dengue manifestations; several investigators have felt & reported various difficulties in using the old system of DF/DHF/DSS. With the realization that existing classification of the disease into DF, DHF and DSS may not always be universally applicable for clinical management; WHO convened a meet of global dengue experts in 2008 in Geneva. Committee recommended a new case classification for Dengue illnesses and put forward revised guidelines in 2009 for the management of dengue illnesses. As per new guidelines disease is now classified into three categories that are dengue, dengue with warning signs and severe dengue. This workshop proposes to acquaint audience with this newer classification and a simplified way of dengue case management. Workshop intends to impart hands on training in understanding staging of the disease and diagnosing various grades of dengue severity with the help of real clinical cases. Lastly it aims to impart a defined system of management as per the stage and severity of disease. The precise knowledge of newer diagnostic and management system would be of great help in reducing dengue ambiguity and thereby significantly alleviate the dengue related morbidity and mortality.

Biography

Ashok Kapse is a consulting Pediatrician practicing in the city of Surat in the Gujarat state of India, besides owning a private pediatric hospital he is also Head of the Pediatric Department at a prestigious Mahavir Super Specialty Hospital. After finishing graduation (MBBS) he did MD in Pediatrics. Initially he has worked as a Professor of Pediatrics at Medical College Surat, later he opted out for private practice however pursued academic interest. He developed special interest and skill in infectious diseases. He is a recipient of many oration awards and delivered hundreds of lectures on dengue, malaria, typhoid and antibiotic uses across India. He has decorated many a posts in medical fields: President of Surat City Branch of Indian Academy of Pediatrics (IAP), President of Gujarat State Branch of IAP and National President of Infectious Diseases Branch of IAP are few of them. He is an avid Clinical Photographer; his photos figure into various books and atlases including the prestigious atlas of infectious diseases published by American Academy of Pediatrics. He has published umpteen articles in peer reviewed journals.

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Scientific Tracks & Abstracts (Day 1)



Infectious Diseases 2016

Track 02: Infectious Diseases Types
Track 04: Global Trends in Emerging Infectious Diseases
Track 07: Microbial Pathogenesis and Virulence
Track 14: Ebola and Current Research
Track 24: Pediatric Infectious Diseases

Session Chair
Glenn S Tillotson
Cempra Pharmaceuticals, USA

Session Chair
Joanna Zajkowska
Medical University of Białystok, Poland

Session Introduction

Title: Therapeutic strategies for osteomyelitis

Adriana Macêdo Dell' Aquila, Federal University of São Paulo, Brazil

Title: ATP as a useful method in controlling cleanliness of flexible endoscopes

Paul Julius Caesar, University Medical Center Groningen, The Netherlands

Title: Evidence supporting vertical transmission of *Rickettsia felis* in mosquito

Jilei Zhang, Yangzhou University, China

Title: Antibody level against malaria and the added effect of intestinal parasites

Amanuel Ateweberhan Woldemariam, Huazhong University of Science and Technology, China

Title: Genotype shift of dengue-2 virus isolated in the Philippines revealed by whole genome analysis

Maria Luisa G Daroy, St. Luke's Medical Center, Philippines

Title: Incorporating individual organ shock into the septic shock and separating a shock and a failure

Sion Jo, Chonbuk National University Hospital, Republic of Korea

Title: Mathematics of avian influenza spread in human population

Durgesh Sinha, Temple University, USA

Title: Assessment of knowledge, attitudes and practices regarding Lassa fever among healthcare workers in a tertiary hospital, Enugu, South-East, Nigeria: Implications for control

Omotowo I Babatunde, University of Nigeria, Nigeria

Title: Mathematical models on *Ebola* virus

Bimal Kumar Mishra, Birla Institute of Technology, India

Title: Decontamination of Prehospital Public Health Spaces

Jason A Thompson, Emergency Products & Research, Inc., USA

Title: Perinatal vertical viral transmission in the tropics: Chikungunya and Zika

Ines Garcia-Garcia, University of Puerto Rico, USA

Title: The use of breast milk in Neonatal Intensive Care Unit (NICU)

Natalia Isaza Brando, Children's National Health System, USA

Title: Improving detection of early onset neonatal sepsis in preterm infants

Leena Bhattacharya Mithal, Northwestern University, USA

**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Therapeutic strategies for osteomyelitis****Adriana Macedo Dell'Aquila**
Federal University of Sao Paulo, Brazil

Background: The main objective in post-osteosynthesis surgical site infection (SSI) is to consolidate the fracture and prevent chronic osteomyelitis, the risk factors for SSI relapse in these patients, who were treated as per osteo-articular infection protocol were evaluated at the Federal University of São Paulo.

Methods: After retrospectively evaluating all SSI episodes occurring from December, 2004 to 2008 in patients undergoing osteosynthesis at the orthopedics department, 110 of them were included. SSIs were treated with at least 4-6 week antibiotic therapy cycles and followed up for one year with the results being analyzed using univariate and multivariate analysis models.

Results: Most patients were 18-89 year old (mean, 39.8 years) males (84.5%). In 37 patients, the causative agent was isolated with *Staphylococcus* being the most frequently observed (38.8%). In 83 (75.4%) patients, the antimicrobial treatment mostly with ciprofloxacin and clindamycin could be started within less than five days from the onset of symptoms. SSI relapses occurred in 34/110 (30.9%) patients. After one-year follow-up, 19 (17.3%) patients persisted with infection and only 10 (9.1%) did not have their fractures consolidated. The univariate analysis showed the performance of more than one surgery to stabilize the affected limb (OR 3.7 IC₉₅=1.1-12.7 p=0.045), presence of converting osteosynthesis (OR 3.6 IC₉₅=1.1-11.3 p=0.023), internal synthesis (OR 3.0 IC₉₅=0.99-9.2 p=0.043) and longer duration of surgery (OR 0.4 IC₉₅=0.1-1.6 p=0.029) as risk factors for SSI relapse. In the multivariate analysis, the only variable independently associated with SSI relapse was duration of surgery (OR 1.3 IC₉₅=1.1-1.7 p=0.015).

Conclusions: After one-year follow-up, using a specific protocol, most patients showed resolution of infection and only 9.1% had their fractures unconsolidated. The only independent risk factor associated with SSI relapse was prolonged surgery.

Biography

Adriana Macedo Dell'Aquila has completed her PhD from Federal University of São Paulo, Brazil. She is the infectious disease Physician responsible for the control and treatment of osteoarticular infections, Department of Orthopedics and the control of infections in the Burns Unit of São Paulo Hospital, Federal University of São Paulo.

aaquila@terra.com.br**Notes:**

**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****ATP as a useful method in controlling cleanliness of flexible endoscopes****Paul J Caesar**

University Medical Center Groningen, Netherlands

Although quality of reprocessing FES has improved over the past decades and permanent controls of process parameters in the automated endoscope washers (AEW) are continuously performed, improper or ineffective cleaning, disinfection, drying and storage (reprocessing) of reusable flexible endoscopes (FES) can pose a serious infection risk to patients. Despite of all quality improvements and a strong believe in validated process parameters of the AEW, in the UMCG FES with channels are still frequently and routinely microbiological (bacterial) sampled by retrograde flushing of all channels. For example, based on historical outcomes, each duodenoscope is sampled every week. Although FES safely passed the process in the AEW, a part of reprocessed FES showed to be positive in microbiological cultures, even with resistant bacteria. This additional screening of microbial quality of reprocessed FES could be regarded as an essential method to detect pitfalls in reprocessing or the state of art quality of FES especially in FES with channels. However, microbial screening is labor-intensive (and thus cost-expensive), takes a long time and only microbial (bacterial) contamination is verifiable. Based on literature and two short surveys in which we studied the use of ATP (adenosine triphosphate) bioluminescence as an alternative in checking the cleanliness of reprocessed ENT-endoscopes and duodenoscopes, we conclude that ATP is a quick, easy and reliable method for regularly monitoring the cleanliness of reprocessed FES. Because it's broader spectrum including all possible organic contamination (e.g., tissue), it has a positive effect on the whole quality and safety process on reprocessing FES and a safe release and use for following patients. ATP can replace high frequent routine microbiological testing, which should only be indicated on clinical problems possible related with the use of FES or when outcomes on ATP indicates the need of further and more in-depth research.

Biography

Paul J Caesar has 25 years of experience in hygiene and infection control. He is presently working as an Expert in Medical Devices and Reprocessing Flexible Endoscopes in the Department of Medical Affairs, Quality and Safety of one of the largest university hospitals in the Netherlands. He has published papers on endoscope reprocessing, hand hygiene and other items on infection control. He has also developed teaching programs on reprocessing flexible endoscopes and cleaning, disinfection and sterilization of medical devices and a nationwide education program on hygiene and infection control for infection control practitioners in hospitals and public health. He is a chair of a Dutch Expert Group for reprocessing flexible endoscopes.

p.caesar@umcg.nl**Notes:**

Evidence supporting vertical transmission of *Rickettsia felis* in mosquito

Jilei Zhang

Yangzhou University, China

Infection caused by *Rickettsia felis* is an important tick-borne disease with natural foci, mainly transmitted through vertebrates (mouse and cat) and arthropods (fleas, ticks). The disease has been documented in more than 20 countries and is recognized as an emergent global threat to human health. Our preliminary report demonstrated that 5.83% (54/926) of the examined mosquitoes carried *R. felis*. In this study, we investigated whether the mosquito can transmit *R. felis* in a vertical fashion. We used a generic FRET-qPCR to detect *R. felis* in mosquitoes while a HMBS-gene based real-time PCR was applied to detect the level of blood meal in collected mosquitoes. During 2013-2015, 1984 mosquitoes were collected monthly in Jiangsu of China and PCRs on these mosquitoes demonstrated that mosquitoes with blood meal between summer months (10.0%) were significantly lower than in winter months (35.8%). In addition, *R. felis* positivity in collected mosquitoes was highest in December (20.8%) among the collected months (0.0-14.4%). Positivities of *R. felis* did not differ significantly between the mosquitoes with (n=29) and without (n=50) blood meal. Furthermore, testing on 23 pools of female mosquitoes showed that 2 pools were *R. felis*-positive and 5 were blood meal-positive. In contrast, 9 of 30 male pools were *R. felis*-positive and none of the male mosquitoes carried blood meal. This is the first report of detecting *Rickettsia* spp. in male mosquito which is blood meal-free. Dynamic monitoring *R. felis* and blood meal in female and male mosquitoes provide here evidence that *R. felis* may be vertically transmitted in mosquitoes.

Biography

Jilei Zhang is currently a PhD candidate of Preventive Veterinary Medicine at College of Veterinary Medicine, Yangzhou University, China. He has published 12 papers in reputed SCI journals and was awarded 4 invention patents associated with vector-borne diseases. He was awarded with the National Scholarship for Graduate Students twice (2013 and 2015) and participated in one research program at The National Natural Science Foundation of China.

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**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Antibody level against malaria and the added effect of intestinal parasites****Amanuel Ateweberhan Woldemariam**

Huazhong University of Science and Technology, China

Immune response to malaria and intestinal parasites is characterized by antibody production (IgE). Th2 immune response gives rise to antibody production and in this study the serum antibody level has been quantified in malaria patients with and without additional intestinal parasitic infection. The study was composed of 198 malaria positive and 217 malaria negative apparently healthy controls. Patients can be with or without additional intestinal parasitic infection. It was a cross sectional observational study conducted at Keren Hospital, Eritrea, Northeast Africa. A pre-designed structured format was utilized to collect socio-demographic and clinical data of the subjects. Detection and quantification of intestinal parasites, malaria parasites and quantification of serum antibody levels were done following standard procedures. Antibody levels of malaria-positive patients were significantly high as compared to that of malaria free apparently healthy controls (with and without intestinal parasitic infections). Malaria-positive patients with additional intestinal parasitic infection showed high level of antibody (2199 IU/ml) compared with those malaria patients without intestinal parasites (1669 IU/ml). The association between malaria parasitic density and level of antibody was highly significant ($P=0.001$) with 2048 IU/ml in high parasitaemia and 1779 IU/ml in low parasitaemia. Intestinal parasite egg loads were also significantly associated with level of antibody ($P=0.003$). It can be concluded that the level of antibody increases in response to malaria. It also increases in response to intestinal parasites. When compared, malaria infection is stronger than intestinal parasitic infection in driving the production of the antibody. Moreover, antibody level is correlated with malaria parasite density and intestinal parasite egg loads.

Biography

Amanuel Ateweberhan Woldemariam is an Assistant Lecturer in Orotta School of Medicine, Asmara, Eritrea. He has worked in different laboratories in Eritrea, East Africa. Currently, he is pursuing Masters in Immunology at Huazhong University of Science and Technology, Tongji Medical College, Wuhan, China.

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Genotype shift of dengue-2 virus isolated in the Philippines revealed by whole genome analysis

Maria Luisa G Daroy

St. Luke's Medical Center, Philippines

Whole genome analysis of dengue virus strains isolated in the Philippines was performed using an Illumina MiSeq next generation sequencer and bioinformatics. Complete genome sequences of 24 DENV-2 isolated from 1995 to 2008 was mapped against a DENV-2 reference sequence (NC_001474) from Genbank. The Philippine DENV-2 isolates were highly similar to strains from Taiwan (AJ968413.1) and China (EF051521.1). The Chinese strain (EF051521.1) was isolated in 2001 yet similar strains could have been circulating in the Philippines as early as 1998. The isolates highly similar to the Taiwanese strain were of the Asian II genotype and the isolates highly similar to the Chinese strain were of the Cosmopolitan genotype. In total, 922 synonymous and non-synonymous substitutions were observed, of which 232 (25.2%) were in the *NS5* gene, which had the most substitutions. This was followed by *NS3* with 181 (19.6%) and the *E* gene with 144 (15.6%) and the *2K* gene with only 6 (0.7%). Putative amino acid sequences from the coding regions revealed that majority (817, 88.6%) of the substitutions were synonymous or silent. Of the remaining 105 non-synonymous mutations, 22 (20.9%) were in the *NS5* gene followed by the *NS1* and *E* genes with 20 (19.0%) and 16 (15.2), respectively. When the clustered genetic variation profiles were identified based on the specific clinical diagnosis, all the DHF III cases belonged to a single cluster together with some DF cases and one SVI case. In contrast, all DHF I-II and most of the DF cases grouped together in another cluster. All DHF III cases were of the Cosmopolitan genotype. DENV circulating within the Philippines from 1995 to 1998 were of the Asian genotype, followed by a period from 1998 to 2001 in which both the Asian II and Cosmopolitan strains co-circulated and from 2000 to 2008 the circulating DENV was primarily cosmopolitan. This supports previous observations of a probable genotype shift in the Philippines. This is the first report of whole genome analyses of dengue virus isolates from the Philippines.

Biography

Maria Luisa G Daroy is a Scientist at the Research and Biotechnology Division of St. Luke's Medical Center and Assistant Professor in the MS Molecular Medicine Program of the St. Luke's College of Medicine-WHQ Memorial. She has published more than 20 papers on dengue, Japanese encephalitis, chikungunya, eye infections, dementia, diabetes and coronary artery disease. She was the Chair of the Board of Examiners of the Philippine Academy for Microbiology from 2013-2015 and authored a book chapter on Philippine microbiology research. Researches include dengue, chikungunya, diarrhea, CNS infections, pathogen genomics, antimicrobial resistance, plant antivirals, molecular diagnostics and genetics of CVD, thyroid cancer and dementia.

mlgdaroy@gmail.com**Notes:**

**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Incorporating individual organ shock into the septic shock and separating a shock and a failure****Sion Jo**

Chonbuk National University Hospital, South Korea

Sepsis is defined as life-threatening organ dysfunction caused by a dysregulated host response to infection. Septic shock is defined as a subset of sepsis in which underlying circulatory and cellular/metabolic abnormalities are profound enough to substantially increase mortality. Clinically, sepsis is identified by suspected or documented infection and an acute increase of ≥ 2 SOFA points (a proxy for organ dysfunction). And in case of septic shock, sepsis and vasopressor therapy needed to elevate MAP ≥ 65 mmHg and serum lactate >2 mmol/L (18 mg/dL) despite adequate fluid resuscitation is used. In contrast to new sepsis which deals with multiple organs, definition of septic shock focuses on circulatory shock and cellular/metabolic shock, seeming not to consider other imperative organs such as CNS or lung. It is a big mistake of septic shock definition. If a sepsis refers to organ dysfunction caused by infection, likewise circulatory and cellular/metabolic shock, respiratory, neurologic and other organs shock should be included in the definition of septic shock. This suggestion is supported that hypoxia and unresponsiveness is associated with increased mortality in sepsis. One more problem is that septic shock definition includes failure of adequate fluid resuscitation in itself even though there is no prerequisite reason. Furthermore, assessment of volume status and adequate fluid resuscitation is still challenging in critical care era. So the separation of a shock and a failure in the clinical definition of septic shock was should be considered.

Biography

Sion Jo has completed his Residency of Emergency Department from Seoul National University Hospital. He is an Assistant Professor of the Chonbuk National University Hospital. He has published more than 10 papers in reputed journals. He has designed the NEWS-L score and a Sion's tube.

akynei@naver.com**Notes:**

**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Mathematics of avian influenza spread in human population****Durgesh Sinha^{1,3,4} and Bimal Kumar Mishra^{1,2}**¹Temple University, USA²Birla Institute of Technology, India³Mercer County Community College, USA⁴Strayer University, USA

Avian influenza virus poses risks to both bird and human population. In primary strain, mutation increases the infectiousness of avian influenza. A mathematical model of avian influenza for both human and bird population is formulated. We have computed the basic reproduction number R_0^h and R_0^b for both human and bird population respectively and we prove that the model is locally and globally asymptotically stable for disease-free equilibrium point when $R_0^h < 1$ and $R_0^b < 1$. We also prove that the unique endemic equilibrium point is globally asymptotically stable in bird population when $R_0^b > 1$. Extensive numerical simulations and sensitivity analysis for various parameters of the model are carried out. The effect of vaccination and quarantined class with recovered class are critically analyzed.

Biography

Durgesh Sinha is an Adjunct Assistant Professor at five institutions; Temple University, Strayer University, Rowan College at Burlington County, Mercer County Community College and Community College of Philadelphia. She has received her Doctorate degree in Applied Mathematics from Vinoba Bhave University, India and Master's degree in Environmental Engineering from Temple University, USA. Her recent publication is "Hydro-magnetic flow of rarefied gas between two parallel flat plates with external circuit, 1999" and "Delayed epidemic model on the attack of Computer virus in network" communicated to *IJITCS*. Her current research interest is on epidemic model applicable in human life, environment and cybercrime.

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Assessment of knowledge, attitudes and practices regarding Lassa fever among healthcare workers in a tertiary hospital, Enugu, South-East, Nigeria: Implications for control**Omotowo I Babatunde, Eyisi I G, Obi I E and Agwu-Umahi R O**
University of Nigeria, Nigeria

Introduction: Lassa fever is a hemorrhagic fever caused by an arena virus. Worldwide, an estimated 2 million people are infected each year resulting to 5,000 to 10,000 deaths. It is endemic in a few West African Countries. In 2012, Nigeria experienced the worst outbreak.

Objective: To assess the knowledge, attitude and practices of healthcare workers towards Lassa fever in Enugu, South-East, Nigeria.

Methods: This cross sectional study was conducted among 325 healthcare workers. Data was collected using a self reported questionnaire on the knowledge, attitude and practices towards Lassa fever. Data was analyzed using SPSS version 21 and statistical significance of association between variables was assessed using Chi-square test at $p < 0.05$. Ethical clearance was obtained from the Research Ethics Committee of UNTH and informed written consent was obtained from the participants.

Results: Overall 325 respondents returned the completed questionnaire. 54.7% were males, 92.6% were aged between 18 to 45 years while their mean age was 32.4 ± 12.6 years. Most of the participants 53.8% were single. Majority of the respondents were Doctors 46.2%, Nurses 23.4%, while Lab scientists, physiotherapists, pharmacists and radiographers were 12.9%, 8.6%, 4.3%, and 4.6% respectively. Also, 97.6% of respondents had tertiary education. Among the participants, only 2.8% have not heard about Lassa fever. Major sources of information are media 87.1%, radio 86.5%, and television 84.9%. Most of the participants knew correctly that Lassa fever can affect all age groups 91.7%, can cause death 92.3%, is a communicable disease 93.8% and transmitted by rats 96.6%. Most of them also knew correctly modes of transmission. However, about 20% of them did not know correctly prevention of Lassa fever. Majority of them believed that hand gloves were most useful personal protective measures while handling patients. Knowledge concerning burial practices and other preventive measures is poor. Only 46.5% of them regularly practiced barrier nursing and hand washing as means of containing the spread of infection. Knowledge on Lassa fever was found to be significantly associated with level of education ($X^2 = 105.680$, $df=4$, $p=0.000$), but not significant to category of profession ($X^2=9.430$, $df=10$, $p=0.492$).

Conclusion: Majority of health workers had good knowledge regarding Lassa fever. However, preventive practices were poor. Health education packages and training regarding Lassa fever should be introduced and sustained in all health facilities.

Biography

Omotowo I Babatunde has obtained MBBS from University of Ilorin, Nigeria in 1987, MPH from University of Nigeria, Nsukka in 2006 and FWACP from West African College of Physicians in 2009. He has worked as a Medical Advisor for German Leprosy and Tuberculosis Relief Association from 2010 to 2012. He is a Lecturer at the Department of Community Medicine, College of Medicine, University of Nigeria, since August, 2012. He is the MBBS Coordinator in the department since then. He has published some papers in both local and international journals. His interests are in infectious and non-communicable diseases.

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August 24-26, 2016 Philadelphia, USA

Mathematical models on *Ebola* virus

Bimal Kumar Mishra

Birla Institute of Technology, India

*E*bola virus disease was first found in 1976 and thereafter it had emerged in different countries in different times, especially in 2014 in Liberia of West Africa and is now highly epidemic and is a great threat to human population. In this paper, we try to understand the spreading behavior of Ebola virus disease (EVD) in the human population. We have used the very close real parametric values as per the data released by 'WHO'. To minimize the spread of EVD, critical analysis is performed both in the presence and absence of control measures. From the sensitivity analysis performed on the real data, we are able to say that the susceptible populations have a strong relation with the threshold number. Effect of quarantine is critically analyzed on the infectious population and it is observed that quarantining the infectious population may play a vital role in controlling the spread of EVD. Results are established both analytically and numerically. We hope that the results will definitely give a managerial insight for control of the spread of EVD.

Biography

Bimal Kumar Mishra is a full Professor in the Department of Mathematics at Birla Institute of Technology, India. Presently he is working in the area of non-linear dynamics, very specifically on Mathematical Models on infectious disease and has published more than 125 research journals of high repute. He has produced several PhDs' and he is a Member of the Editorial Board of several international journals.

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**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Decontamination of Prehospital Public Health Spaces****Jason A Thompson**

Emergency Products & Research, Inc., USA

In 2014, the world was concerned about the largest historical outbreak of the Ebola Virus happening in West Africa. This led to significant concerns about readiness to manage those who were potentially infected. In the United States, prehospital care providers were scrambling to prepare and desperate for directions they could rely on. This caught many decision makers by surprise and eager to understand why the public health community was seemingly unprepared. With some investigation, it quickly became apparent that the issue was directly correlated to the absence of a solid general understanding of infection prevention and control (IPC) practices among first responders and, surprisingly, public health officials. A rapid solution to this problem was essential, but there were no obvious leaders taking the charge, so a small team from Emergency Products & Research (EP+R), of Kent, Ohio, stepped forward. Working with other industry professionals and seeking advice from academia, EP+R launched an initiative that evolved into AMBUstat™, which is a program designed to introduce a common sense approach to IPC that can be easily and cost-effectively rolled out around the globe. The AMBUstat™ portable biological decontamination system, a key component of the AMBUstat™ program, was designed for ease-of-use, minimal training requirements and environmental consciousness. With the AMBUstat™ program, IPC is easy to understand and it provides the potential for a global platform that enables us to be ready for the next biological threat, with the most important aspect being a critical focus on proactive rather than reactive strategies.

Biography

Jason A Thompson has been involved in public health since 1993, primarily revolving around the delivery of prehospital emergency medical care. He discovered his calling in the United States Navy as a hospital corpsman and has subsequently employed those skills as an emergency medical technician, healthcare administrator, medicolegal analyst and product development consultant. Jason has a passion for problem-solving and making the world a safer place, whether it is educating scouts in advanced first aid, instructing first responders on the use of lifesaving strategies, designing remote medical care programs and, of course, advocating for improvements in public health, specifically responsible hygienic practices.

JasonT@epandr.com**Notes:**

**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Perinatal vertical viral transmission in the tropics: Chikungunya and Zika****Ines Garcia-Garcia, Lourdes Garcia-Fragoso, Melanie Rodriguez and Leticia Gely**
University of Puerto Rico, USA

The recent emergence in America of Chikungunya and Zika has added new febrile viral diseases which impact susceptible women in childbearing age and with a high rate of vertical transmission, which can occur in asymptomatic women. Both diseases are caused by viruses transmitted primarily by *Aedes* mosquitoes, found throughout much of the tropical and subtropical regions of the Americas. Some reports warn that climate change will worsen vector-borne disease threat. Chikungunya fever was first identified in Puerto Rico during an outbreak in 2014. 10 newborns were admitted from mothers with chikungunya-like symptoms within 5 days after delivery. The most prevalent symptoms in those babies were irritability and maculopapular rash. 3 babies were admitted from mothers with symptoms more than 5 days from delivery. Symptoms like fever, irritability and rash were not present, but they presented central nervous system lesions. At present, health officials reported that 1,726 people have been infected with Zika in Puerto Rico, including a total of 191 pregnant women. Only one case of microcephaly has been reported. These outbreaks prompted our Neonatal-Perinatal Service to characterize clinical manifestations of the diseases, develop guidelines for diagnosis and management of suspected intrauterine exposed fetuses. Health care professionals need to be familiar with the surveillance system, perform history taking focusing on febrile viral illnesses during pregnancy, recognize women at risk for chikungunya and Zika infections, and follow the protocols established by the local and state Health Authorities, including neurodevelopmental follow-up of affected offsprings.

Biography

Ines Garcia-Garcia has completed her Medical Training at the University of Puerto Rico. She is Board Certified in Pediatrics Specialty and in the Neonatal-Perinatal Medicine Sub-specialty. She is a Professor at the University of Puerto Rico, School of Medicine. She has published in reputed journals and books, including articles related to intrauterine exposure to viral infections and congenital anomalies. She actively participates in Graduate Medical Education Programs. She is a Member of national and international research and academic associations. She has participated as a Speaker in multiple professional meetings in the United States, Latin-America and Europe.

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The use of breast milk in Neonatal Intensive Care Unit (NICU)

Natalia Isaza Brando

Children's National Health System, USA

I will intend to cover during the talk: The bioactive components in human milk that influence the immune status of newborns; the physiological and protective functions of the immune components in human milk: Anti-microbial substances and antibodies; the constituents in breast milk that promote tolerance and priming of the immune system in the newborn; how breastfeeding provides passive and long-lasting active immunity; how the use of oral immunotherapy with colostrum in the first days of life of sick newborns can improve their response to infections in the NICU; how human milk can improve the incidence of nosocomial infections in the NICU.

Biography

Natalia Isaza Brando is an Associate Neonatology Physician in Children's National Health System, Washington DC. She had work experience as Neonatology Physician Associate, NICU attending, Adjunct Instructor in Pediatrics, Health and Wellbeing Program Director, Instructor, Health Educator, Pediatrician and Physician. She is interested in investigating the short and long-term impact of maternal depression on mother-infant behaviors.

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**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Improving detection of early onset neonatal sepsis in preterm infants****Leena Bhattacharya Mithal**
Northwestern University, USA

Early onset neonatal sepsis disproportionately affects preterm infants and remains a major cause of morbidity and mortality. Yet, diagnosis remains inadequate resulting in missed cases or prolonged empiric antibiotics with significant adverse consequences including necrotizing enterocolitis, antibiotic resistance, and death. Development of novel, more reliable methods to diagnose sepsis in preterm infants is essential to improve their outcomes. Biomarkers of infection, placental histopathology, and molecular methods of pathogen detection are among the tools being investigated for accurate identification of infants with sepsis. This presentation will review the conundrum of early onset sepsis in preterm infant and discuss both existing evidence and new research on novel diagnostics, including data on acute phase reactants and 16S rRNA PCR of cord blood in a large single-center cohort.

Biography

Leena Bhattacharya Mithal is a Pediatric Infectious Diseases specialist at the Ann & Robert H. Lurie Children's Hospital of Chicago and an Instructor at Northwestern University, Feinberg School of Medicine. She is pursuing her Master Degree in Clinical Investigation at the Northwestern Graduate School. Her research interests include neonatal infections, novel diagnostics for sepsis in preterm infants, study of the perinatal-neonatal microbiome, and vaccine awareness and delivery.

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August 24-26, 2016 Philadelphia, USA

Scientific Tracks & Abstracts (Day 2)



Infectious Diseases 2016

Track 08: Immunology of Infections

Track 10: Epidemiology of Emerging and Re Emerging Diseases

Track 11: Diagnosis of Infectious Diseases

Track 12: Treatment for Infectious Diseases

Track 19: Infectious Diseases Prevention, Control Measures and Cure

Session Chair

Francis J Castellino

University of Notre Dame, USA

Session Chair

Eugenie Bergogne-Berezin

Centre Hospitalo-Universitaire Bichat Claude Bernard University
Diderot, France

Session Introduction

Title: *In vivo* flow cytometry for early diagnosis and prevention of infections

Zharov Vladimir P, University of Arkansas for Medical Sciences, USA

Title: Multiple regulatory small RNAs control virulence in enteropathogenic *Escherichia coli*

Shantanu Bhatt, Saint Joseph's University, USA

Title: Ventilator associated pneumonia in neonatal intensive care units

Kartikeya Makker, University of Florida College of Medicine Jacksonville, USA

Title: Fever with rash

Ashok Kapse, Mahavir Super Specialty Hospital, India

Title: Different types of cancer: Effect of socioeconomic status, food and physical activity in cancer children and adolescents in Cochabamba, Bolivia

Maria Del Rosario Dávalos Gamboa, University of San Simón, Bolivia

Title: Impact and influence of waterpipe tobacco smoking on bacterial oral flora

Muhamad Ali Khalil Shakhathreh, Jordan University of Science and Technology, Jordan

Title: Usefulness of rapid diagnostic test Typhidot-M in early diagnosis of typhoid fever in children

Thambarasi Sundaram, Sri Ramachandra University, India

Young Researchers Forum

Session Introduction

Title: Leprosy and medical practitioners in Enugu, Southern Nigeria

Otache Adah Emmanuel, University of Nigeria, Nigeria

Title: Investigation of the role of the sRNA RyhB in regulating the locus of enterocyte effacement pathogenicity Island in enteropathogenic *Escherichia coli*

Marisa Egan, Saint Joseph's University, USA

**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA*****In vivo* flow cytometry for early diagnosis and prevention of infections****Zharov Vladimir P**

University of Arkansas for Medical Sciences, USA

Infections remain one of the main causes of death in the worldwide. The diagnosis of infections and other diseases begins with a common medical procedure: The examination of blood samples. The sensitivity of current blood tests is limited by the small volume of blood collected, in which no less than one disease-specific biomarker (e.g., pathogen) can be detected. This can miss many thousands of abnormal cells and biomarkers in the whole blood volume (~5 liter in adults), which can be sufficient for disease progression to difficult-to-treat if not already incurable complications (e.g., sepsis). This report summarizes our novel concept of early disease diagnosis with ~1000-fold improved sensitivity using *in vivo* non-invasive photoacoustic (PA) flow cytometry (PAFC) platform for identification and enumeration of rare circulating disease-associated biomarkers with intrinsic PA contrasts (e.g., hemozoinin malaria) or molecularly targeted with the functionalized gold nanoparticles. The principle of PAFC is based on the irradiation of the superficial blood vessels with near-infrared laser pulses followed by detection of laser-induced acoustic waves from single biomarkers with small ultrasound transducer attached to skin. In addition, the integration in real-time diagnosis and therapy (called theranostics) can eradicate circulating bacteria and viruses and thus can potentially prevent or at least inhibit deadly complications. Recent advances of this label-free theranostics platform is presented with focus on its pre-clinical and clinical trials associated with malaria, *S. aureus* and bacteremia.

Biography

Zharov Vladimir P is the Director of the Arkansas Nanomedicine Center at the University of Arkansas for Medical Sciences, USA. He has received his PhD and DSc degrees from the Bauman Moscow State Technical University (BMSTU) and completed his Postdoctoral Fellowship at Lawrence Berkeley National Laboratory at the University of California. He has served as the Chairman of Biomedical Engineering Department at the BMSTU and his record of innovative achievements include more than 200 publications (5 in Nature journals), 54 patents and 5 books. He pioneered photoacoustic and photothermal medical technologies, laser pulse nanotherapy of infections and cancer, laser-ultrasonic microsurgery and *in vivo* flow cytometry. He is the State Prize Winner, the most prestigious national award in Russia and the first recipient of the US Maiman Award, named after the inventor of the first laser.

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Multiple regulatory small RNAs control virulence in enteropathogenic *Escherichia coli*Shantanu Bhatt, Marisa Egan, Valerie Jenkins, Thomas Buerkert, Jasmine Ramirez, Christian Xander, Jamie Palmer and Elizabeth Storm
Saint Joseph's University, USA

Enteropathogenic *Escherichia coli* (EPEC) is responsible for considerable disease and death amongst infants in developing countries. EPEC belongs to the attaching and effacing (A/E) family of bacterial pathogens, which are aptly named because they adhere intimately to intestinal cells and destroy cellular microvilli to form characteristic pathomorphological A/E lesions, which lead to diarrhea and dehydration. The ability to form A/E lesions resides within the virulence module locus of enterocyte effacement (LEE), which encodes a type III secretion system (T3SS). To date, over fifty non-LEE encoded regulators have been identified in EPEC. The vast majority of these regulators affect the expression of the LEE-encoded transcription factors, Ler, GrlR and GrlA. Intriguingly, every regulator of the LEE that has been identified to date in EPEC is a proteinaceous factor. Thus far, not a single regulatory small RNA (sRNA) has been implicated in its virulence. We set out to identify and characterize sRNA regulators of the LEE in EPEC. Our preliminary data suggest that Hfq globally represses gene expression from all the LEE-encoded genes including the *grlRA* operon. Because Hfq and Hfq-dependent sRNAs typically target the 5' region of the first gene in an operon, we constructed a reporter *E. coli* strain in which only the 5' UTR and 45 nucleotides of the *grlR* ORF were fused to a chromosomal N-terminally truncated *lacZ* gene driven by the heterologous P_{araBAD} promoter (P_{araBAD} -*grlR-lacZ*). Inactivation of *hfq* resulted in elevated β -galactosidase activity from the *grlR-lacZ* fusion suggesting that the cloned 5' region of *grlR* was sufficient to elicit Hfq-dependent repression. These results also suggest that one or more Hfq-dependent sRNAs, conserved between EPEC and *E. coli*, regulate *grlRA*. To identify these sRNAs, each of the 27 conserved Hfq-dependent sRNAs was individually overproduced in the *grlR-lacZ* reporter strain. Three sRNAs-MgrR, RyhB and McaS reproducibly repressed the *grlR-lacZ* fusion. Using IntaRNA we aligned each of the 3 sRNAs to the cloned 5' region of *grlR*. Bioinformatic analysis revealed that MgrR exhibited the most extensive and contiguous region of complementarity (~10 bp) with the *grlR* leader region. The predicted base-pairing region in MgrR was substituted with a scrambled oligonucleotide sequence that lacks complementarity to *grlR*. Predictably, mutation of the base-pairing region abolished the ability of MgrR to pair to and repress the *grlR-lacZ* fusion, thereby providing genetic evidence for direct base-pairing between *grlR* and MgrR. Subsequent experiments revealed that MgrR binds to the same region on the *grlRA* transcript as CsrA and counteracts its stimulatory effect. Meanwhile, RyhB appeared to form a relatively shorter (~6 bp) duplex with the ribosome-binding site of *grlR*. An oligonucleotide substitution in the base-pairing region of RyhB also prevented the sRNA from repressing the *grlR-lacZ* fusion, suggesting that RyhB, like MgrR, base pairs to the 5' region of *grlR*. In contrast to MgrR and RyhB, McaS did not possess any regions of complementarity to *grlR* and presumably exerts its effect by sequestering CsrA. In summary, our results provide the first piece of evidence to implicate multiple Hfq-dependent sRNAs in controlling the LEE-encoded virulence of EPEC. Future studies are aimed at elucidating the molecular mechanism by which MgrR, RyhB and McaS regulate the LEE and the ensuing A/E lesion formation.

Biography

Shantanu Bhatt is affiliated to Saint Joseph's University, USA

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**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Ventilator associated pneumonia in neonatal intensive care units****Kartikeya Makker**

University of Florida College of Medicine Jacksonville, USA

Ventilator-associated pneumonia (VAP) is a serious complication related to mechanical ventilation in the neonatal period. However, lack of a specific definition and difficulties obtaining noncontaminated samples of the lower respiratory airway render microbiological diagnosis and etiological treatment extremely difficult. Thus far, only few studies have approached VAP using accepted Centers for Disease Control and Prevention criteria and reliable sampling techniques. In recent years, however, the blind-protected bronchoalveolar lavage technique with protected specimen brush and the development of validated biomarkers have attempted to overcome the diagnostic difficulties and assess the response to therapy. This presentation on neonatal VAP aims to stimulate neonatologists' interest in this subtle but serious complication of mechanical ventilation

Biography

Kartikeya Makker is an Assistant Professor in Neonatology at University of Florida College of Medicine and is the Quality Initiative Director of the Neonatal Intensive Care Unit (NICU) at UF Health. He is also a candidate for Master of Public Health at Johns Hopkins Bloomberg School of Public Health. He has several publications, national presentations and has been awarded for Medical Education on numerous occasions.

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**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Fever with rash****Ashok Kapse**

Mahavir Super Specialty Hospital, India

Child presenting with rash is common occurrence in pediatrics. Rash presenting with fever provides you material for microbiological evaluation, offers you unique opportunity to make clinical diagnosis and gives clinician vital leads towards severity markers. A case could be approached in different ways however rash based approach is the easiest way for clinical evaluation. Classification and evaluation of rash as erythematous, maculopapular, papulovesicular, petechial, blisterous and so on leads clinician to correct diagnosis and proper management. Correct typing of rash directs clinician towards a careful wait and watch approach in certain clinical situation while dictates him to act emergently in others. I intend to provide an easy clinico-pictorial approach for a case presenting with rash in day to day practice.

Biography

Ashok Kapse is a consulting Pediatrician practicing in the city of Surat in the Gujarat state of India, besides owning a private pediatric hospital he is also the Head of the Pediatric Department at a prestigious Mahavir Super Specialty Hospital. After completing graduation (MBBS) he did MD in Pediatrics. Initially he has worked as a Professor of Pediatrics at Medical College Surat, later he opted out for private practice however pursued academic interest. He has developed special interest and skills in infectious diseases. He is a recipient of many oration awards and delivered hundreds of lectures on dengue, malaria, typhoid and antibiotic uses across India. He has decorated many posts in medical fields: President of Surat City Branch of Indian Academy of Pediatrics (IAP), President of Gujarat State Branch of IAP and National President of Infectious Diseases Branch of IAP are few of them. He is an avid Clinical Photographer; his photos figure into various books and atlases including the prestigious atlas of infectious diseases published by American Academy of Pediatrics. He has published umpteen articles in peer reviewed journals.

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**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Different types of cancer: Effect of socioeconomic status, food and physical activity in cancer children and adolescents in Cochabamba, Bolivia****Maria Del Rosario Davalos Gamboa**
University of San Simon, Bolivia

Introduction: In Bolivia there is no research to identify the effect of socioeconomic status, diet and physical activity in cancer in children and adolescents.

Objectives: The aim of this study was to identify the predominant types of cancer in children and adolescents attending the Children's Hospital Manuel Ascencio Villarroel in Cochabamba (Bolivia) and the effect it had on these socioeconomic status, diet and physical activity.

Methods: Cross sectional study conducted in January 2016 in children and adolescents with cancer (n=36) between zero and 16 years old who attend the Hospital Manuel Ascencio Villarroel child of Cochabamba (Bolivia), involving 21 male and 15 female. Parents or guardians of the participants were surveyed. It has been made a descriptive and explanatory analysis.

Results: The prevalent cancer in this population was leukemia. In a proportion of 72.22%, cancerous tumors in various parts of the body were 11.11% and other cancers were 16.7%. In the socioeconomic status of the parents, lived in urban areas 66.66%, 50% lived in a rented house, 66.6% had a house built of brick and 52.77% lived in two rooms of 47.22 parents had secondary school and 36.11% of primary school. In the type of feeding natural products before the diagnosis of cancer, 41.66% used to eat natural carbohydrates, 61.11% natural protein, natural fats 61.11%, 63.88% natural fruit, 55.55% natural fiber, drank plenty of water 27.77%. The type of food not suitable before diagnosis of cancer, ate deli meats 33.33%, 75% drank carbonated soft drinks, 83.3% ate junk food sugar and refined flour and 77.77% ate junk food. No statistical significant differences in physical activity were detected.

Conclusions: This study identified that leukemia is the prevalent type of cancer in children and adolescents who regularly attend child Hospital Manuel Ascencio Villarroel in Cochabamba. That most children and adolescents with cancer live in urban areas and are economically disadvantaged. The feeding they received before the cancer diagnosis was a varied diet based on natural products and not suitable that facilitate the development of cancer and almost all the children and teens commonly consumed soft drinks, refined sugar, refined flour and junk food products; Foods that are related to the origin of cancer.

Biography

Maria Del Rosario Davalos Gamboa has acquired her Pharmaceutical Biochemistry degree from the University of San Simon. She has started working at the University of San Simon in the Faculty of Medicine at the Laboratory of Nuclear Medicine and later from August 1992 continued working as a Teaching Research Assistant till 1998. From 2009 to 2010, she was the Director of the Research Institute of the Faculty of Dentistry UMSS and in 1997 won a competency exam at the Faculty of Dentistry UMSS in Biochemistry and appointed as a Professor. She is currently a Legal Representative and owner partner (in a greater proportion than 51% of shares) of the International Associated Factory oils and coals SRL ACECAB, in the city of Santa Cruz, Bolivia, whose principal activity is to generate cosmetic oils and charcoal.

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**Joint Event on 2nd World Congress on
Infectious Diseases****&****International Conference on****Pediatric Care & Pediatric Infectious Diseases****August 24-26, 2016 Philadelphia, USA****Impact and influence of waterpipe tobacco smoking on bacterial oral flora****Muhamad Ali K Shakhathreh, Omar F Khabour, Karem H Alzoubi, Majed M Masadeh, Emad I Hussein and George N Bshara**
Jordan University of Science and Technology, Jordan

Waterpipe tobacco smoking (WTS) has significantly increased worldwide. It has become a global public health problem (threat) and a serious global concern. This type of smoking is not a safe alternative to cigarette smoking which is a potential risk factor. The effects of waterpipe tobacco smoking on health outcomes remain unknown. However, few studies investigated and reported the relationship between waterpipe tobacco smoking and adverse health effects (deleterious health effects associated with waterpipe tobacco smoking). Little is known about effects of waterpipe tobacco smoking on oral health (if it can cause oral health problems). The objective of the current investigation is to determine the effect of waterpipe tobacco smoking on the changes in oral microbial flora which is still under investigation. Samples were taken aseptically from the oral cavity and subgingival regions of healthy participants (waterpipe smokers and waterpipe non-smokers). To identify types, frequency and mean number of microorganisms in cultures from the oral cavity and subgingival regions, standard bacterial culture methods were used. The present study provides a preliminary proof (evidence) indicating that oral microbial flora is significantly changed (altered) by waterpipe tobacco smoking (linking between waterpipe tobacco smoking and alteration in oral microflora).

Biography

Muhamad Ali K Shakhathreh has completed his PhD. from University of Dayton- USA. Currently, he is an Assistant Professor in Jordan University of Science and Technology (Jordan) in the field of Microbiology. His research experience and interests are in bacteriology with focusing on medical microbiology. He has 6 publications.

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Usefulness of rapid diagnostic test Typhidot-M in early diagnosis of typhoid fever in children

Thambarasi Sundaram

Sri Ramachandra University, India

Objectives: To determine the usefulness of Typhidot M in rapid diagnosis of typhoid fever in children and to determine the sensitivity and specificity of Typhidot M with blood culture as gold standard.

Methods: Blood samples were collected from 130 children who were clinically diagnosed as typhoid fever. Typhidot-M is a dot enzyme immunoassay for detection of specific IgM to *Salmonella* Typhi. Samples were serologically tested with Typhidot assay as per the kit instruction (Typhidot M/s AB Diagnostics Pvt. Ltd). For analysis purpose study group was divided into four; Confirmed Typhoid fever: Diagnosis of typhoid fever as confirmed by positive culture of *S. Typhi*; Probable typhoid fever: Children with fever and with a positive serodiagnosis (WIDAL) or antigen detection test but without *S. Typhi* isolation; Clinical enteric fever: Patient's whose clinical course is compatible with typhoid fever but without *S. Typhi* isolation; and Non-typhoid fever: Children with definitive alternative diagnosis and in whom blood culture is negative for *Salmonella* Typhi.

Results: Of the 130 blood samples, 31 (23.8%) were positive of *Salmonella* Typhi infection and remaining 99 were negative for *Salmonella* Typhi. 54 (41.5%) were typhidot IgM positive. There were no cases in which culture was positive and typhidot negative. But there was false positive in 23 patients (17.6%). Of these 5 were probable typhoid fever, 2 were clinical typhoid fever, 3 had infection with *S. Paratyphi* A and 13 patients in non-typhoid group. The sensitivity, specificity, positive and negative predictive value of Typhidot test in comparison with blood culture were 100%, 76.7%, 57.4%, 100%, respectively.

Conclusions: After analyzing the present study, it was concluded that blood culture remains the gold standard for the diagnosis of typhoid fever. Typhidot M may be an alternative in early and rapid diagnosis of typhoid fever where facility of blood culture is not available.

Biography

Thambarasi Sundaram has completed her MBBS and Post graduation studies from Sri Ramchandra University, India.

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Leprosy and medical practitioners in Enugu, Southern NigeriaOmotowo I Babatunde¹, Chukwu J N² and Otache A E¹¹University of Nigeria, Nigeria²German Leprosy and Tuberculosis Relief Association, Nigeria

Introduction: Leprosy is a chronic infectious disease that is associated with serious morbidity and is a disease of public health concern because of the social stigma. Knowledge, attitudes and practices of medical practitioners is vital in the control.

Objective: The aim of the study was to assess the knowledge, attitudes and practices of medical officers and interns regarding leprosy disease.

Methods: This cross sectional study was conducted among medical officers and interns in University of Nigeria teaching Hospital and Enugu State University Teaching Hospital, both in Enugu. Data was collected using a self reported questionnaire on the knowledge, attitude and practices towards Leprosy. Data was analyzed using SPSS version 21 and statistical significance of association between variables was assessed using Chi-square test at $p < 0.05$. Ethical clearance was obtained from the Research Ethics Committees of both health facilities.

Results: All the 26 medical officers and 262 interns returned the completed questionnaires. In the study, interns showed higher knowledge 78.2% than medical officers 60.4%. Knowledge of the respondents on diagnosis, management and prevention of leprosy was adequate. However, their overall attitudes and practices towards leprosy were poor. 50% of them would not eat, 79.9% would not marry and 34.7% of them would not agree to perform cardio-pulmonary resuscitation (CPR) to persons affected by leprosy. Only 33.3% would like to work in any leprosy referral hospital, while 5.1% would not agree to be admitted in the same hospital with persons affected by leprosy and 31.3% would like to isolate people affected with leprosy from the general community. Agree to perform CPR and category of profession relationship was not statistically significant ($X^2=8.296$, $df=4$, $p=0.081$), but the relationship with the age of the participants was significant ($X^2=17.111$, $df=8$, $p=0.029$).

Conclusion: The study revealed there is adequate knowledge among medical officers and interns with regards to leprosy in the two hospitals. However, their attitudes and practices are poor. There is need to organize training programs at regular intervals for interns and medical officers in out-patients departments.

Biography

Otache A E is affiliated to University of Nigeria, Nigeria

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August 24-26, 2016 Philadelphia, USA

Investigation of the role of the sRNA RyhB in regulating the locus of enterocyte effacement pathogenicity Island in enteropathogenic *Escherichia coli*Marisa Egan, Jasmine Ramirez, Christian Xander and Shantanu Bhatt
Saint Joseph's University, USA

Enteropathogenic *Escherichia coli*, commonly known as EPEC is a diarrheal pathogen that infects infants in developing countries. The bacterium belongs to the attaching and effacing (A/E) morphotype of pathogenic *E. coli*, since it infects infants by directly binding to intestinal epithelial cells and destroying the microvilli. The virulence of EPEC is attributed to its major pathogenicity island: The locus of enterocyte effacement (LEE). Treatment of EPEC infections is particularly challenging, because currently there are no vaccines against this bacterium. The problem is only exacerbated by the emergence of multi-drug resistant strains of EPEC. Thus, understanding the regulatory pathways that govern the LEE is critical towards the development of effective measures to combat EPEC infections. The LEE is responsive to a myriad of environmental cues with the majority of them targeting three LEE-encoded transcription factors: Ler, GrlR, and GrlA. Whereas transcriptional regulation of the LEE has been widely characterized, post transcriptional regulation including regulation by trans-encoded regulatory small RNAs (sRNAs), remains understudied. Most sRNAs exert their effects by directly base-pairing to their target mRNAs to influence the translation and/or stability of the target mRNA. A subset of these sRNAs requires Hfq, a chaperone protein that assists in the finding and base-pairing of sRNAs to their target mRNAs. One such sRNA is RyhB. Preliminary results suggest that Hfq and RyhB core press the *grlRA* mRNA that encodes GrlR and GrlA. To better understand the mechanism of action of RyhB on the *grlRA* mRNA, we performed *in silico* alignment analysis. By using IntaRNA, we identified regions of complementarity between RyhB and the ribosomal binding site, in the 5' untranslated region (UTR), of the upstream gene *grlR* in the *grlRA* mRNA. In order to confirm this prediction of direct base-pairing between RyhB and *grlRA*, we constructed a polynucleotide mutation in the seed region of RyhB; this mutation completely abolished the ability of the mutant RyhB to base pair to and represses the *grlR-lacZ* fusion. Thus, collectively, our results suggest that RyhB represses the LEE by directing base-pairing to the leader segment of the *grlRA* mRNA and preventing the expression of both GrlR and GrlA. Future studies are aimed at further understanding the RyhB-mediated regulation of the LEE by genetic, biochemical and phenotypic assays to with the goal of developing efficacious and potent pharmacological targets against EPEC.

Biography

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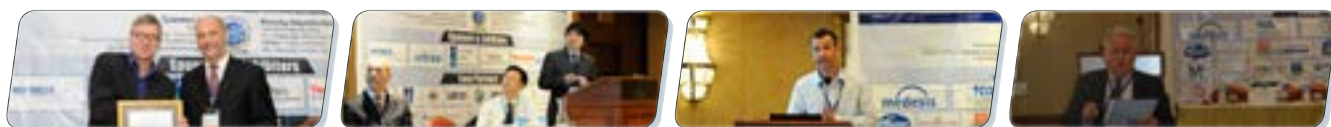
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Infectious Diseases 2016

Track 06: Clinical Studies and Case Reports

Track 09: Mechanism of Resistance

Track 15: Tuberculosis

Track 16: Hepatitis

Track 25: Antibiotic Resistance

Session Chair

Stef Stienstra

Dutch Armed Forces / Royal Dutch Navy, Netherlands

Session Chair

Rachel Groppo

Sanofi Pasteur, USA

Session Introduction

Title: Volatile compounds in the stem bark of *Sclerocarya birrea* (Anacardiaceae) possess antimicrobial activity against drug-resistant strains of *Helicobacter pylori*

Roland Ndip Ndip, University of Buea, Cameroon

Title: Fever protocol at emergency department to reduce the use of antibiotics and antibiotic resistance

Neeraj Kumar Tulara, Dr L H Hiranandani Hospital, India

Title: Development of nano-based microemulsion from tea tree oil and silver nanoparticles and assessment of their enhanced antimicrobial activities against representative wound infecting pathogens

Ashraf Osman Abdellatif Mohamed, Cairo University, Egypt

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August 24-26, 2016 Philadelphia, USA

Volatile compounds in the stem bark of *Sclerocarya birrea* (Anacardiaceae) possess antimicrobial activity against drug-resistant strains of *Helicobacter pylori*Roland N Ndip^{1,2}, C Njume¹, A J Afolayan¹ and E Green¹¹University of Fort Hare, South Africa²University of Buea, Cameroon

The aim of this study was to isolate and identify phytochemicals with anti-*Helicobacter pylori* activity from the stem bark of *Sclerocarya birrea*. The plant crude extract was fractionated by silica gel column and thin layer chromatography techniques; initially with ethyl acetate (EA) and subsequently with a combination of ethyl acetate/methanol/water (EMW). Further fractionation and identification of the phyto-constituents was achieved by gas chromatography and mass spectrometry (GC/MS) analysis. The antimicrobial activity of the fractions and compounds was evaluated against 5 metronidazole and clarythromycin-resistant strains of *H. pylori* and a reference strain ATCC 43526 using micro-broth dilution technique. Amoxicillin was included in these experiments as a positive control antibiotic. Sixteen of the 18 fractions collected demonstrated anti-*H. pylori* activity with minimum inhibitory concentration (MIC₅₀) values ranging from 310-2500 µg/mL. Two of the fractions; EMW fraction 6 and EA fraction 1 revealed the presence of 5 and 24 compounds respectively representing 40.5% and 86.57% of the total composition. Most of the compounds were essential oils with terpinen-4-ol being the most abundant agent (35.83%), followed by pyrrolidine (32.15%), aromadendrene (13.63%) and α-gujunene (8.77%). MIC₅₀ values for amoxicillin, terpinen-4-ol and pyrrolidine ranged from 0.0003-0.06 µg/mL, 0.004-0.06 µg/mL and 0.005-6.3 µg/mL respectively. The inhibitory activities of terpinen-4-ol and pyrrolidine were similar to amoxicillin (P>0.05). Most of these compounds are being reported in this plant for the first time and may represent new sources of therapeutically useful compounds against *H. pylori*.

Biography

Roland N Ndip has obtained his PhD in 1994 from the Edo State University, Nigeria. He has worked as a Professional Microbiologist for over 20 years successively at Edo State University, Nigeria; University of Fort Hare, South Africa and the University of Buea, Cameroon rising to the rank of Professor of Microbiology. His research has concentrated in the areas of microbiology, molecular biology, antimicrobial chemotherapy and alternative and complementary medicine. He has published over 100 articles in international peer reviewed journals of repute. He currently serves as a Registrar at the University of Buea, Cameroon.

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Fever protocol at emergency department to reduce the use of antibiotics and antibiotic resistance

Neeraj Kumar Tulara

Dr L H Hiranandani Hospital, India

Background: Fever is most common presentation of any disease of any etiology. For children many fever protocol has been practiced in developed and also developing world but for fever in adult patients there are paucity of literature about how to investigate and treat the adult patient presenting first time with the fever in emergency care.

Objective: Objective of this study is to devise standard care pathway for all adults who presents with fever with no localizing signs in order to avoid unnecessary investigation and unwanted antibiotics. After devising fever protocol, pilot study was performed to see its effectiveness.

Methods: A protocol was formulated for all adults presenting with fever without any signs of SIRS and no localizing signs to suggest the clear etiology of the fever. Initial investigations were based on duration of fever, type of fever and associated symptoms along with fever. Treatment was based on the results of investigations. A pilot study was conducted wherein all adults with fever were included and data were analyzed.

Results: During the 3 month study period 1109 adult patients were presented with fever in emergency department, out of them 876 were fitting in the parameters of devised protocol with 659 patients were presented within the first 48 hours of the onset of fever. All patients experienced the defervescence of the fever. Of the patients presented within 48 hours, 69.8% (460/659) defervesced without the need of any investigations and 63.2% (416/659) defervesced without the need of any antibiotic therapy.

Conclusion: Implementation of fever protocol in emergency care department helped to reduce the unnecessary investigation and antibiotics. Thus reducing the cost of the management of fever and also the most important is to help in reducing the antimicrobial resistance by reducing the unwanted used of antimicrobials.

Biography

Neeraj Kumar Tulara has completed his Post graduate Diploma in Infectious Disease from South Wales University, Australia. He is a Diplomate at National Board-Internal Medicine, India. He is an MBBS (Bachelor of Medicine and Surgery), India. He is a Member of IDSA, USA. He is an Editor for *SM Tropical Medicine Journal*, USA and a Reviewer of *Biomedical Sciences*, USA.

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Development of nano-based microemulsion from tea tree oil and silver nanoparticles and assessment of their enhanced antimicrobial activities against representative wound infecting pathogensAshraf Osman Abdellatif Mohamed^{1,2}, Suad Y Alkarib¹ and Alaa M Shawkey²¹Karary University, Sudan²Cairo University, Egypt

Combining and incorporating of the natural antimicrobials with metal nanoparticles is a growing research area because of their potential applications in nanomedicines to enhance and synergize their activity as well as to minimize unwanted side effects by using lower concentrations. The aim of the present study was to investigate the feasibility of using tea tree oil (TTO) and greenly synthesized silver nanoparticles (AgNPs) alone and in micro emulsion combination formula against representative wound infecting pathogens namely; *Staphylococcus aureus*, methicillin resistant *Staphylococcus aureus* (MRSA), *Pseudomonas aeruginosa* and *Candida albicans*. The result of the bioassay showed that both TTO-AgNPs combination possesses a potential antimicrobial property. Based on the minimum lethal concentration (MLC), the fractional lethal concentration index (FLCI) showed that treatment with combinations of TTO and AgNPs exerted a synergistic effect against MRSA (FLCI=0.233) followed by *P. aeruginosa* (FLCI=0.263) and indifferent effects against *S. aureus* and *C. albicans* (0.53 and 0.73, respectively). As well, analysis of the morphological changes in *S. aureus* cells by transmission electron microscope (TEM) revealed that, AgNPs aggregated and located non-specifically on the cell wall, also, AgNPs were seen within the cell wall or the cell of bacteria. The cells became severely distorted and disrupted showing a bactericidal action when compared to untreated cells. In conclusion, these results showed the potential of using TTO and AgNPs in form of micro-emulsion combination and this could be developed into a broad spectrum pharmaceutical product for treating wound infections.

Biography

Ashraf Osman Abdellatif Mohamed is currently a PhD student at Faculty of Pharmacy, Cairo University, Egypt. He has published five papers in reputed journals.

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