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Posters

Saeb EL-Sukhon, J Infect Dis Ther 2017, 5:2 (Suppl)
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Studies on ESBL producing uropathogenic *E. coli* isolates in Jordan

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A total of 105 uropathogenic *E. coli* isolates cumulated from major hospitals/health centers in Jordan were characterized. They exhibited a resistance ranged from 10.4% to 95.2% toward 16 different antibiotics whereas resistance toward human serum was determined in 28 (26.6%) isolates which revealed an increase in their count ranged from 0.3 to 1.23, from 0.3 to 1.54 and from 0.3 to 0.477 logs after one, two and three interaction hours. 24 (22.8%) isolates were found as ESBL producers and of those, 10 isolates were serum resistant. The obtained results represent a strong indication on the threat of uropathogenic E.coli strains in Jordan and on their public health hazardous potential in nosocomial infections.

Biography

Saeb EL-Sukhon is involved in Academic Teaching and Research in the field of Bacteriology and Infectious Diseases. He carried out many academic administrative responsibilities either as Head of Department and/or as a Dean. He supervised many MSc students and published several articles in reputed specialized journals. He is a member of "Veterinary Education" of the OiE, Paris. He serves as an Editor and reviewd several manuscripts either from the region or internationally.

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Notes:

Linda Bridina et al., J Infect Dis Ther 2017, 5:2 (Suppl)
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Biochemical and microbiological profile of patients admitted with sepsis in an intensive care unit

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Background: Beyond issues related to measurement, the incidence of sepsis depends on host, pathogen and system factors, for example, lifestyle, sex, race, immune response, chronic health disorders, distribution of pathogens, and access to intensive care. Although these factors are articulated as separate entities, their complex interplay is crucial to consider.

Materials & Methods: The retrospective analysis of 72 patients' medical records was carried out. The research included both sexes and all ages' patients who were hospitalized at Riga Eastern Clinical University Hospital inpatient "Gaiļezers" from 2011 to 2014 years. Blood test on the sterility and identification of blood culture were performed for all the patients. Data was described using means with standard deviations (SD), median with interquartile range (IQR), Mann-Whitney U method, chi-square tests. Data statistical analysis was done in SPSS.

Results: From all 72 (100%) patients included in the study, 67 (93.05%) patients had immuno compromised background- tumors, intra-abdominal infections, complicated soft tissue infections, cardiovascular, endocrine, lung, liver, kidney diseases, HIV, viral hepatitis and alcohol addiction. Five (6.9%) patients were not diagnosed with related diseases. Our data showed that most of the patients were in the age group of 60 to 79 (n=32.44%) and 20 of them (62.5%) died. Summarizing the results, all patients at the time of hospitalization had elevated C reactive protein (CRP). More than the half of patients 56 (77.7%) CRP was above 259 mg/L. Leukocytosis was diagnosed with 59 (81.9%) patients. Leukopenia was diagnosed with six (8.3%) patients. 32 (44.4%) patients had elevated liver indicators (ALT, AST). 39 (54.1%) patients had elevated kidney indicators. But the renal replacement therapy during hospitalization was received by 13 (18.1%) of patients. For the dead patients (n=36.50%) the renal replacement therapy was received by 25% (p = 0.12). Plating of blood was positive in 32 (44.4%) of all the patients. Blood agent in culture grows-*Streptococcus* beta-hemolytic group B was 1 (3.1%), *Escherichia coli* 3 (9.37%), Staphylococcus *epidermidis* 5 (15.6%), Staphylococcus *hominis* 1 (3.1%), *Staphylococcus aureus* 7 (21.9%), Staphylococcus *haemolyticus* 1 (3.1%), *Prevotella oralis* 1 (3.1%), *Streptococcus pneumonia* 10 (31.3%), *Klebsiella pneumonia* 1 (3.1%), Clostridium difficile 1 (3.1%), *Streptococcus* beta-hemolytic group A 1 (3.1%). Microbiological plating of urine was positive in 11 (15.3%) patients; the most common agents in plating were *E. coli* and *Staphylococci*.

Conclusion: In our study, blood culture was mostly positive for less than a half of patients (44.4%). In most instances, bloodstream infections are intermittent and the circulating microbial loads are low; it makes the diagnosis and treatment of sepsis even harder.

Biography

Linda Brīdiņa is currently studying at Riga Stradins University, Latvia. Her study mainly focuses on "Infection and immune system, biochemical and microbiological research on patients with sepsis".

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Notes:

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The preliminary results of microRNA gene expression in patients with Crimean-Congo hemorrhagic fever

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Cumhuriyet University, Turkey

Statement of the Problem: Crimean-Congo hemorrhagic fever (CCHF) is a tick-borne disease caused by the arbovirus CCHF virus and characterized by a sudden onset of high fever, severe headache, dizziness, back and abdominal pains. The disease now occurs sporadically throughout much of Africa, Asia and Europe and results in an approximately 15% fatality rate. MicroRNAs (miRNAs) are small non-coding RNAs responsible of post transcriptional regulation of gene expression through interaction with mRNAs. They are involved in important biological processes and are often dysregulated in a variety of diseases, including cancer and infections. miRNAs are key players in virus-host interactions and viral pathogenesis.

Aim: The aim of this study is to investigate micro RNA gene expression profiles in patients with CCHF using microarray at first time of the world.

Methodology & Theoretical Orientation: In our study, patients with CCHF will be investigated in miRNA expression profiles using microarray analysis. The miRNA expression levels were compared between case and control populations. Blood samples were taken from CCHF patients and control. Total RNA was isolated from blood samples using miRNeasy Mini kit (Qiagen). Microarray analysis was performed using miRBase Version 21 (Agilent Technologies).

Findings: Result of miRNA expression was analyzed by GeneSpring Version 3.0 bioinformatics program. It has been found that five miRNA expressions of patients with CCHF were statistically significant with regard to controls. MiR-126-3p, miR-144-5p, miR-148a-3p were up-regulated, whereas miR-339-3p and miR-4497 was down-regulated in CCHF patients when compared within controls. This analysis revealed these five miRNAs with a fold change from 1.71 to 27.14.

Conclusion & Significance: The preliminary analysis of miRNAs in CCHF revealed differential miRNA expression in infected individuals and control. The results obtained from the study will contribute to explain the role of miRNA in pathogenesis of CCHF.

Biography

Serdal Arslan is an Associate Professor in Department of Medical Biology, Faculty of Medicine at Cumhuriyet University, Turkey. He completed his PhD in Molecular Biology. His area of expertise is in Molecular Medicine. He has been working on non-coding RNAs in different diseases. He has been conducting molecular genetic studies in Crimean-Congo hemorrhagic fever disease in recent years.

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Matilda Gjergji et al., J Infect Dis Ther 2017, 5:2 (Suppl)
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Pulmonary complications in HIV/AIDS patients

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Introduction: Pulmonary complications are very common during the course of acquired immunodeficiency syndrome (AIDS).

Aim: The main aim of the study is to assess the patterns of respiratory complications in the HIV/AIDS patients.

Materials & Methods: In this study, 77 patients were enrolled (83.1% male HIV/AIDS) with pulmonary complications, with the mean age of the subjects 46.4±10.2 and known as HIV seropositive patients from 5.1±2.4 years. Data were elaborated by SPSS17.

Results: By occupational 29 (37.7%) were unemployed, 22 (28.6%) employed, 5 (6.5%) farmers, 7 (9.1%) office-bearer, 14 (18.2%) were others. Regarding the count of CD4 cells 6 (7.8%) showed 300-399 cell/ml, 15 (19.5%) with 200-300 cell/ml, 28 (36.4%) patients showed 100-199 cell/ml and 28 (36.4%) <100 cell/ml. 84 pulmonary manifestations were found in all the 77 patients with HIV/AIDS respectively bacterial *pneumonia* (first episode) in 12 (14.3%) cases, recurrent bacterial *pneumonia* 9 (10.6%), pneumocystis carinii *pneumonia* (PCP) 33 (39.3%) cases, tuberculosis 27 (32.2%), divided in 23 (27.4%) cases as pulmonary tuberculosis and 4 (4.8%) as generalized tuberculosis. Kaposi syndrome was found in 2 patients (2.4%) and COPD in 1 (1.2%). At the end of the study (September 2015), 13 patients died and 12 of them had CD4 count level lower than CD4<199/ml. We found a positive correlations between ages and mortality (p=.003) and the pattern of pulmonary complications with CD4+ count level (P<0.0001).

Conclusions: In our study, the most common respiratory complications with high mortality rate are opportunistic infections from pneumocystis carinii *pneumonia* (PCP) and tuberculosis (TB). The level of CD4+ count is a useful indicator for developing respiratory infections and complications in HIV/AIDS patients.

Biography

Matilda Gjergji completed her Graduation at Mother Teresa University Hospital, Albania in 2003. She completed her Post-graduate studies in Pneumology. From 2010, she is working at main national outpatients' center for patients with respiratory disease, Tirana, Albania. She is member of several professional associations and has participated regularly in medical conferences and congresses worldwide. She has contributed in many studies, especially in epidemiology and clinical data, in patients with respiratory infectious disease.

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Shakif Mohammad Shakur et al., J Infect Dis Ther 2017, 5:2 (Suppl)
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The need for surveillance–A snapshot of antimicrobial resistance of gram-negative isolates in Australian children with culture-proven bloodstream infections

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Gram-negative bloodstream infections cause significant morbidity and mortality of children worldwide. Rising rates of bacterial resistance emphasizes the need for monitoring of causative organisms and their susceptibility patterns, to guide appropriate antibiotic therapy. Antimicrobial resistance is an important public health issue and thus, monitoring of local populations is warranted. We investigated cases of proven bacteraemia from infected children from a socio-economically disadvantage population. We retrospectively reviewed the cohort of children aged 0 to 16 years who were admitted to a metropolitan hospital in Sydney, Australia, from January 1, 2010 to August 31, 2014 inclusive, and whose blood cultures isolated gram-negative organisms. Data was collected regarding patient demographics, species of bacteria isolated, antimicrobial susceptibility of these isolates, and clinical outcomes. We identified a total of 35 isolates from 33 patients, of whom 45% were aged <12 months. The most common gram-negative isolate was *Escherichia coli* (42%), followed by *Salmonella* spp. (12%) and *Neisseria meningitidis* (12%). The most common primary site of infection was the urinary tract, accounting for 33% of patients. *Escherichia coli* showed high rates of resistance to ampicillin (43%), trimethoprim (36%) and co-trimoxazole (41%). The majority of *Escherichia coli* isolates were susceptible to amoxicillin/clavulanate (81%) and all isolates tested against ceftriaxone and gentamicin was susceptible. Most other isolates showed >90% susceptibility to common antimicrobial agents. In this single-centre study, we have drawn attention to a high rate of resistance of *Escherichia coli* bacteria to common antimicrobial agents. This highlights the importance of ongoing surveillance of local populations, and may warrant changes to empirical antibiotic treatment in the near future.

Biography

Shakif Mohammad Shakur has completed his Bachelor of Medicine/Bachelor of Surgery at Western Sydney University, Australia. Currently, he is a Junior Medical Officer at Campbelltown Hospital, a 300 bed hospital located at South Western Sydney, New South Wales, Australia.

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Naser Shahbi Nejad et al., J Infect Dis Ther 2017, 5:2 (Suppl)
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First molecular confirmation of acute Q fever in Iran

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There are limited data on the aetiology of acute undifferentiated febrile illnesses (AUFIs) in Iran. Moreover, *Coxiella burnetii* has not previously been detected in clinical samples in this country. Previous studies have highlighted the importance of considering *C. burnetii* as a cause of AUFI. In this retrospective study, in 92 cases of AUFI where Q fever was suspected, *C. burnetii* DNA was detected in seven samples (7.36%) using a nested trans-PCR. This is the first molecular confirmation of *C. burnetii* from clinical samples from Iran.

Biography

Naser Shahbi Nejad has expertise in "Diagnosis of emerging infectious diseases in southeast Iran. This approach is responsive to all searches to find Q fever cases in Iran.

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Maksims Cistjakovs et al., J Infect Dis Ther 2017, 5:2 (Suppl)
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Incidence of high-risk Human papillomavirus infection in immuno compromised hosts

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Statement of the Problem: Cervical cancer is the second most common women cancer in the world. High-risk human papillomavirus (HR-HPV) infection is the most common cause and just two HPV types, 16 and 18, are responsible for about 70% of all cervical cancer cases. Due to long-term immunosuppressive therapy, renal transplant recipients have faster progression from infection to lesions and higher risk of developing cervical cancer. The purpose of this study is to compare frequency and viral load of HR-HPV in female renal recipients with immunosuppression, and in individuals without immunosuppression.

Methodology & Theoretical Orientation: In this research, 16 patients were enrolled six months after renal transplantation and 16 inviduals without immunosuppression as a control group. Genomic DNA was extracted from cervical swabs. Polymerase chain reaction (PCR) with consensus primers was used for initial detection of high range HPV types. HR-HPV qPCR was used for quantitative detection of 12 types of HR-HPV (16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, and 59). To detect HR-HPV16 and 18 types specific PCR was used.

Findings: HPV DNA was detected in 12 out of 16 recipients (75%) and five of them (31%) were positive on HR-HPV infection. In contrast, seven out of 16 (43%) controls were positive HPV DNA and only one was positive on HR-HPV infection. Three recipients showed the highest viral load of HR-HPV (3,630,780, 4,655,860 and 29,512,092 copies/105 cells, respectively). From five patients with HR-HPV infection-one was positive on HPV16 and another one on HPV18. Only one individual from control group was positive on HR-HPV with 169,824 copies/105 cells.

Conclusions: At point, the study is showing higher presence of HR-HPV infection with higher viral load in female recipients than in individuals without immunosuppression which means that they have higher risk of cervical dysplasia development.

Biography

Maksims Cistjakovs has over 10 years of working experience in Clinical Virology research. Main focus of his study is on "Immunomodulating properties of human herpesvirus-6 and high-risk papillomaviruses infection in immuno compromised hosts.

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What is the prevalence of upper respiratory tract pneumococcal carriage in chronically malnourished children aged from birth to five years?

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Background & Objectives: Respiratory-tract infections and invasive disease caused by *Streptococcus pneumoniae* (Spn) are a major cause of childhood deaths worldwide. Colonisation of Spn is a prerequisite to pneumococcal disease and carriage is high in children under five years. Chronic malnutrition impairs immune responses, rendering children more susceptible to infection. This is reflected by higher incidence of disease. As studies have suggested the paradigm of chronic malnutrition leading to increased rates of Spn carriage, the aim of this systematic review is to determine the prevalence rate of pneumococcal carriage in the upper respiratory tract of chronically malnourished children under the age of five years.

Methods: A systematic search of the existing literature reporting upper respiratory tract prevalence rate of Spn colonisation in malnourished children under the age of five, using Medline, PubMed, Web of Science and Scopus, was carried out. An eligibility criteria was used to include relevant papers.

Findings: The prevalence rate of Spn colonisation in malnourished children under the age of five was high. Prevalence at birth ranged from 1.0-2.0% and this greatly increases at two months to 53.9-80.0%. Carriage remains high from three months to 60 months at 64.1-88.0%. Meta-analysis showed a pooled prevalence of 67.2% in 0-3 months infants (95% CI, 55.6-78.7%), 77.9% in 3-6 months infants (95% CI, 68.1-87.7%) and 77.8% in 6-60 months infants (95% CI, 73.9-81.6%).

Conclusion: In chronically malnourished children, pneumococcal carriage is frequent. However, as data is limited, further research is needed to investigate the aetiology and the strength of this association.

Biography

Holly Smith is a 5th year Medical student, intercalating in an MRes in Clinical Sciences at University of Liverpool. She completed systematic review and meta-analysis from September 2016 to January 2017 at Liverpool School of Tropical Medicine, under the supervision of Dr Daniela Ferreira.

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Omoya F Oluyemi et al., J Infect Dis Ther 2017, 5:2 (Suppl)
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The antibacterial evaluation of honey and *Moringa* (*Moringa oleifera*) leaf extract against bacteria isolated from inanimate surfaces of a hospital

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Statement of Problem: Healthcare facilities today harms too frequently and often fails to deliver its potential benefits because pathogenic microorganisms are readily present on fomites surfaces, thereby increasing the spread of nosocomial infections. The aim of this study was to investigate the types of microorganisms associated with selected fomites surfaces of the female and male wards of the FUTA Health Centre, Akure, Ondo state of Nigeria.

Methodology: A total of 28 samples were collected from the bed linens, bed rails, bedside cabinets, door knobs, chairs, floor, wall and sink faucets from the male and female wards using sterile swab sticks moistened with normal saline and cultured on different selected media. The antibacterial efficacy of ethanol extract of *Moringa oleifera* (Lam) leaf and pure honey were investigated *in vitro* against the isolated bacteria using the agar well diffusion technique at different concentrations.

Findings: The bacteria isolated were *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Klebsiella pneumonia*e, *Bacillus cereus, Staphylococcus epidermidis, Micrococcus* spp., *Enterococcus* spp., and *Escherichia coli* in descending order of prevalence. All the bacterial isolates were successfully inhibited by *Moringa oleifera* at all concentrations. The zone of inhibition increased with increase in the concentration of the leaf extract. All the bacteria isolates were inhibited by pure honey at 100% concentration with the highest zone of inhibition of 20.5 mm recorded for *Staphylococcus aureus*. At 75% concentration, *Staphylococcus aureus*, *Enterococcus* spp., and *Klebsiella pneumonia*e were the only bacteria inhibited. At 25% and 50% concentrations, no bacterium was inhibited. This result showed that *Moringa oleifera* leaf extract and pure honey exhibited a dose-dependent effect on the bacterial isolates and that inanimate surface of hospital environment houses varieties of bacteria may be responsible for nosocomial infections.

Biography

Omoya F Oluyemi is a Senior Lecturer and Researcher. She has her expertise in Environmental Health and Bio-control. She has researched on several infections that are caused mainly by poverty and environmental hazards, investigating *in vitro* effect of different plants extracts and honey on the etiologic agents.

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Detection of antimicrobial resistance genes of *Helicobacter pylori* strains to clarithromycin, metronidazole, amoxicillin and tetracycline among Egyptian patients

Dalia Salem[1], Manal Diab[1], Ahmed El-Shenawy[1], Maged El-Ghannam[1], Moustafa Abdelnasser[2], Mohamed Shahin[1], Mahmoud Abdel-Hady[2], Effat El-Sherbini[1] and **Mohamed Saber[1]**

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Antibiotic resistance of *Helicobacter pylori* (*H.pylori*) treatment is on the rise and is affecting the efficacy of current used therapeutic regimens. The choice of empiric treatment should be anticipated on the bases of antibiotic resistance rates. Therefore, we aimed to enhance the understanding of antimicrobial resistance rates of *H.pylori* strains recovered from patients in Theodor Bilharz Research Institute Hospital in Egypt, as a mandatory step before starting treatment. Mutant genes conferring metronidazole, amoxicillin, and clarithromycin and tetracycline resistance were detected in 60 *H. pylori* strains recovered from patients who underwent upper endoscopic examination. Patients were considered to be infected with *H. pylori* when rapid urease test and detection of 16S rRNA in gastric biopsies recorded positive. Molecular detection of resistant genes to metronidazole (rdx gene) and amoxicillin (pbp1A gene) was carried out by conventional PCR followed by sequencing of PCR products. *H. pylori* resistance to metronidazole and amoxicillin were 25% and 18.3% respectively. While for clarithromycin and tetracycline, point mutations in 23S rRNA types A2142G and A2143G and in 16S rRNA of *H. pylori* were assessed by real time PCR assay respectively. Resistance mutant genes were found to be 6.7% of clarithromycin and 1.7% of tetracycline. Combined resistance rates to metronidazole and amoxicillin was 11.6% followed by metronidazole and clarithromycin 5%, while patterns of clarithromycin and amoxicillin 1.6%, metronidazole, clarithromycin and amoxicillin 1.6% were revealed. In conclusion, data concerning antimicrobial resistance genes play an important role in empiric treatment of *H. pylori* infection. According to our results *H. pylori* resistance to metronidazole and amoxicillin was relatively high. Clarithromycin is still a good option for first line anti- *H. pylori* treatment. Combined resistant strains are emerging and may have an effect on the combination therapy.

Biography

Dalia Salem is a Lecturer of Medical Microbiology at Theodor Bilharz Research Institute- Egypt. Her special research interest and expertise is in "Detection of emerging mechanisms of multi-drug-resistant bacteria and their susceptibility patterns to novel antibiotics in addition to antimicrobial resistant genes and virulence markers in *Helicobacter pylori*-related infections".

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Detection of *Helicobacter pylori vacA, cagA* and *iceA1* virulence genes associated with gastric diseases in Egyptian patients

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Helicobactor pylori (*H. pylori*) virulence markers would be useful to predict peptic ulcer disease (PUD) or gastric cancer. In Egypt, since inadequate data are present regarding *H. pylori* virulence–related genes in different age group patients with gastro-duodenal diseases, it becomes crucial to study the clinical status of *cagA, vacA* and *iceA1* genotypes of *H. pylori* strains recovered from patients with dyspepsia. The study included 113 dyspeptic patients who were exposed to upper gastrointestinal endoscopic examination. Four antral biopsies were obtained from each patient for the analysis of *H. pylori* infection by rapid urease test and detection of 16S rRNA. 60 (53.1%) patient were confirmed to be infected with *H. pylori*. Upon endoscopy gastritis was revealed in 27 (45%) and 10 (16.7%) had PUD. Of the 60 *H. pylori* strains, 39 (65%) had at least one virulence gene. Six different genotypic forms were recognized; vacA (9/60), *iceA1* (1/60), vacA/cagA (7/60), vacA/*iceA1* (13/60), vacA/cagA/iceA1 (8/60), only one cagA/iceA type and we could not detect cagA. The overall vacA, iceA1 and cagA genes were identified (61.6%, 38.8%, 26.6% respectively) by PCR-based molecular testing. The vacA gene status was highly significant related to gastritis patient (P≤0.036). The vacA s1m1 and s2m2 alleles were significantly found in 50% of *H. pylori* infected patients with PUD and with gastritis 57.1% respectively (P≤0.01). In conclusion, the main genotype combinations in the studied Egyptian patients were; vacAs2m2/*iceA1*, vacAs1m1/cagA, mostly associated with gastritis, and *vacAs1/cagA/icA*, mainly in PUD. The less virulent (s2, s2m2) *H. pylori* genotypes were found in patients aged over 43 years.

Biography

Dalia Salem is a Lecturer of Medical Microbiology at Theodor Bilharz Research Institute- Egypt. Her special research interest and expertise is in "Detection of emerging mechanisms of multi-drug-resistant bacteria and their susceptibility patterns to novel antibiotics in addition to antimicrobial resistant genes and virulence markers in *Helicobacter pylori*-related infections".

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In vivo imaging to explore the respiratory tract in a model of Bordetella pertussis infection in non-human primates

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Non-invasive and longitudinal imaging approaches are required to study host/pathogens interactions in relevant animal models. Whooping cough or pertussis, resulting from infection with the bacteria Bordetella pertussis in the respiratory tract is a contemporary medical and public health problem. The deficiencies of current acellular vaccines are well documented, including the striking observation that acellular vaccination of non-human primates (NHP) only protects against disease symptoms but not colonization or transmission. The baboon model of B. pertussis infection has recently shown promising results according clinical symptoms and transmission. To enable the development of more effective vaccine strategies, a better understanding of mechanism of action of the bacteria *in vivo* is needed using this model. We thus implement fluorescence imaging techniques including fibered confocal fluorescence microscopy (FCFM) coupled with bronchoscopy to explore the respiratory tract for visualizing the localization of Bordetella pertussis and its interactions with immune cells after infection ex vivo and *in vivo* in non-human primates. Using GFP-expressing B. pertussis and fluorescent labeled anti-HLA-DR monoclonal antibodies, we were able to specifically detect the bacterial and antigen presenting cells (APCs) localizations and interactions in the lower respiratory tract of young baboons after infection. These preliminary findings confirm previous published *in vitro* data about strong interactions between Bordetella pertussis and dendritic cells and macrophages. This approach using fluorescence imaging will then be a useful tool to describe the mechanisms of action of the bacteria during infection to develop more effective vaccines against pertussis.

Biography

Thibaut Naninck is pursuing his PhD at Infectious Diseases Model for Innovative Therapies Center, France. His project focuses on "Whooping cough physiopathology in non-human primate models and on innovative imaging techniques allowing infection follow-up *in vivo*".

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Horia Radid et al., J Infect Dis Ther 2017, 5:2 (Suppl)
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Microbiological quality evaluation of the commercialized raw cow's milk in sale

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Among the most popular origins of diseases that have relation with feeding, we find, the perishable commodities and particularly the milk and its products especially during the very hot summer days. The matched methods for conservation of milk and the hygiene measures have never been respected. The objective of this study allows estimating the microbiological quality of raw cow's milk of 120 taken samples, at sale, from four farms, four peddlers and four dairies during spring 2013. In all the samples that we analyzed, we looked for many micro-organisms, like the total aerobic mesophilic flora, the total coliforms and fecal coliforms, *Escherichia coli, Staphylococcus aureus, Streptococcus β-hemolyticus, Listeria monocytogenes, Salmonella* and *Brucella abortus*. The synthesis of the obtained global results during the microbiological tests of the cow's raw milk which is collected from farms, peddlers and dairies, doesn't show any specific fluctuations during all the way long of the trial period. Indeed, it doesn't matter if the raw milk has been collected from a farm, peddler or a dairy; the microbiological quality test is always the same whether it is qualitatively or quantitatively. It is then necessary to create some effective control measures, in order to protect the health of the consumer. For the best milk quality, the dairy farmers must submit the most efficient hygienic methods.

Biography

Horia Radid is currently working as a faculty of Sciences, University Mohammed V Rabat, Morocco. She possess laboratory experiments in "Microbiology and genomic biology, medical, bacteriological and microbiological of food, water and food hygiene analysis". Her research work mainly focuses to evaluate the microbiological quality of foods and food hygiene in order to raise the consumer awareness and to establish in the whole country a successful information system for the investigation and monitoring of the diseases that have a feeding origin.

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Notes:

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e-Poster

Monica Pia P Reyes et al., J Infect Dis Ther 2017, 5:2 (Suppl)
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Cytomegalovirus-Varicella Zoster Meningoencephalitis and Ischemic Stroke in an HIV-AIDS patient: A Case Report

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Along with the increasing number of newly diagnosed Human Immunodeficiency Virus (HIV) patients per day in the Philippines (26 new cases/day), an increasing number of HIV patients were diagnosed with Central Nervous System Infection (CNSI) and Stroke. A study shows that the risk of ischemic stroke was higher among those with HIV infection compared with uninfected people (hazard ratio 1.17). Mechanisms of ischemic stroke include HIV-associated vasculopathy, opportunistic infections or neoplasia, cardioembolism and coagulopathy. This case report aims to present a CNS co-infection of the three most documented viruses that causes stroke: Cytomegalovirus (CMV), Varicella Zoster Virus (VZV) and HIV. The inflammatory cascade in these infections promotes atherosclerosis, plaque rupture, and thrombosis, leading to ischaemic stroke. A 35-year-old male with HIV who was non-compliant with anti-retroviral therapy and who had recent untreated shingles was brought in with decreased sensorium, signs of meningeal irritation and right-sided neurologic deficit. Computed tomography scan revealed acute to sub-acute infarct, left middle cerebral artery territory (figure 1). Vancomycin, ampicillin, cefepime and ganciclovir were empirically started for central nervous system infection. HIV work-up revealed a CD4 of 11 cells/mm3 and HIV-1 RNA of 1,124,215 copies/mL. CMV IgG was positive at 65 U/mL. Lumbar tap done had an elevated opening pressure with elevated cerebrospinal fluid (CSF) protein, low-normal CSF glucose, and pleocytosis with lymphocytic predominance. Viral panel showed CMV viral load of 634,000 copies/mL and VZV IgG 44.4mIU/L clinching the diagnosis of concomitant CMV-VZV meningoencephalitis in an HIV patient. Magnetic resonance imaging and angiogram is compatible with viral vasculopathy (figure 2). The pathogenic mechanisms of VZV reactivation in the CNS include neuronal and glial direct infection and immune-mediated lesions including vasculitis and demyelinization while CMV infection of vascular smooth muscle cells induces production of powerful pro-inflammatory cytokines which accelerate atherosclerosis development. This seems to be the first reported case of co-infection of the CMV-VZV-HIV meningoencephalitis and ischemic stroke.

Biography

Monica Pia P Reyes is a Diplomate of Philippine College of Physicians. She completed her Medical degree at University of the Philippines and; Internal Medicine Residency training at St. Luke's Medical Center- Global City, Philippines where she was granted 2016 Excellence in Research Award. She is an incoming Infectious Disease Fellow at Philippine General Hospital. She has organized research forums and training workshops. Her research interest includes HIV/AIDS, Tuberculosis, and Critical Care Medicine.

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Notes:

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Surveillance of methicillin-resistant *Staphylococcus aureus* (MRSA) at a general hospital in Saudi Arabia

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Background & Aim: MRSA colonization and infection are widespread worldwide causing significant morbidity and economic impact. MRSA is hard due to their resistance to commonly used antibiotics. Prevention is only hope if patients to be targeted are known. We present results of surveillance to identify at-risks patients and units in a Saudi Arabia hospital in Jeddah. The aim is to detect the range of MRSA spread through hospital wards and units, between the patients their genders and sites and to use the results to recommend effective infection control systems to prevent hospital acquired infections in hospital settings.

Methods: The subjects consisted of 597 in-patients from different wards between January 2010 and January 2011. A total of 2074 swabs from multi-sites were collected and tested with the BDGO BD GeneOhm using both PCR and conventional chromogenic culture. Smart Cycler® II software was used for amplifying, detecting and interpreting the results.

Results: There are statistically significant ($p<0.001$) overall MRSA infection prevalence of 25.2%. Units' prevalence ranges from 4.8% (medical rehabilitation) to 80% (coronary unit). There is statistically significant effects of age ($p=0.04$) and sex ($p=0.05$) on MRSA infection. Two of the swab sites are statistically significant [nasal swab ($p<0.01$)] and perineum ($p<0.001$).

Conclusions: From the findings of this study, we conclude that hospital surveillance of MRSA can help to identify not only at-risk patients but can also indicate which units to target activities of control of infection for effective results.

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Association of demographic factors with the prevalence of Human papillomavirus and *Chlamydia trachomatis* infection in cervical and anal cases of sexually active women in India

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Background: Human papillomavirus (HPV) is considered to be the main etiologic agent for cervical cancer and *Chlamydia trachomatis* (CT) is one of the major cofactors in the development of cervical intraepithelial neoplasia.

Aim: The present study was conducted to investigate the presence of HPV and CT infection in cervical and anal samples of sexually active women.

Material & Methods: We collected 60 cervical samples and 60 anal samples and screened them for HPV and CT. Female patients were included having the symptoms of genital infection such as pelvic inflammation, vaginal discharge and lower abdominal pain and having history of anal intercourse. Cervical and anal scrapes were used for the evaluation of HPV and CT using polymerase chain reaction.

Results: Among the cervical cases, positivity for HPV was 33% (20/60) and CT was 40% (24/60). In anal cases, the prevalence of HPV was 5% (3/60) and CT was 3% (2/60). The most common type of HPV found in our study was type 16 (85.7 %) followed by type 18 (14.3%). In cervical cases 27% (16/60) were co-infected, therefore in anal cases it was 5% (3/60). We found that socioeconomic status and educational level were significantly associated with these infections.

Conclusion: This study shows that HPV and CT prevalence is higher in cervical cases as compared to anal cases. There is need to continuously screen, counsel, treat and monitor trends of HPV and CT infection to make women aware about cervical cancer. Further, large population based studies are recommended to conclude this finding.

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Hospital cost of invasive pneumococcal diseases among children less than 15 year old in Tunisia

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Statement of the Problem: Invasive pneumococcal disease (IPD) caused by *Streptococcus pneumonia*e remains a global health problem and imposes a great burden on society and health care system.

Aim: The objective of this study was to estimate the medical cost of hospitalizations due to IPD (*pneumonia* and *meningitis*) among children under 15 year old in Tunisia, in an effort to provide sufficient data which can help policy makers to assess the need for the vaccine.

Methodology: A prospective multicenter study was conducted in 15 pediatric departments across different socio-economic areas of Tunisia from June 2014 to May 2015. All children under 15 years old who were hospitalized for pneumococcal *pneumonia* or confirmed bacterial meningitis were enrolled. A case report form was completed for every eligible case. Activity based costing method was used to estimate the hospital cost. Data entry and statistical analysis were conducted using SPSS, version 20.0.

Findings: During the study period, 727 children were hospitalized for pneumococcal *pneumonia* and 60 children were hospitalized for bacterial meningitis, among them 21(35%) had confirmed pneumococcal meningitis. The median hospital cost for pneumococcal *pneumonia* was 353.910 TD and it was 1680.632 TD for pneumococcal meningitis. By overall data extrapolation, we estimated that nearly 1091 hospitalizations for pneumococcal *pneumonia* and 69 hospitalizations for pneumococcal meningitis occur each year in Tunisian children under 15 years of age, incurring total costs of 502 079.408 TD.

Conclusion: The economic burden of pneumococcal infections seems to be major in Tunisia, where a safe and effective vaccine is available but has not yet been introduced to immunization schedules.

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Severe skull base osteomyelitis caused by *Pseudomonas aeruginosa* with successful outcome after prolonged outpatient therapy with continuous infusion of ceftazidime and oral ciprofloxacin: A case report

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Skull base osteomyelitis is an uncommon disease that usually complicates a malignant external otitis with temporal bone involvement. It affects predominantly diabetic and immuno compromised males and has a high mortality rate. *Pseudomonas aeruginosa* is the most common causative organism. Currently, there is no consensus about the best therapeutic option. Here, we describe a case of severe skull base osteomyelitis caused by *Pseudomonas aeruginosa* with progressive palsy of cranial nerves that was successfully managed with prolonged outpatient continuous infusion of ceftazidime plus oral ciprofloxacin. A 69-year-old man presented with dysphagia, headache and weight loss. He complained of left earache and purulent otorrhea. Over the following weeks, he developed progressive palsy of IX, X, VI and XII cranial nerves and papilledema. A petrous-bone computed tomography showed a mass in the left jugular foramen with a strong lytic component that expanded to the cavum. A biopsy was then performed and microbiological cultures grew *Pseudomonas aeruginosa*. After six weeks of parenteral antibiotic treatment, the patient was discharged and treatment was continued with a domiciliary continuous infusion of a beta-lactam through a peripherally inserted central catheter, along with an oral fluoroquinolone for 10 months. Both radiological and clinical responses were excellent. Skull base osteomyelitis is a life-threating condition; clinical suspicion and correct microbiological identification are key to achieve an accurate and timely diagnosis. Due to the poor outcome of *Pseudomonas aeruginosa* skull base osteomyelitis, prolonged outpatient parenteral antibiotic therapy administered by continuous infusion could be a valuable option for these patients.

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Prevalence of extended spectrum beta lactamases producing *Escherichia coli* isolated from clinical samples at tertiary care hospital Peshawar

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Escherichia coli are gram negative, facultative and non sporulating rod shaped bacteria. It is commonly inhabitant of the gastrointestinal tract of humans and animals. *E. coli* cause diseases like urinary tract infection cholecystitis, cholangitis and traveler's diarrhoea and the UTI which is more prevalent worldwide. Extend spectrum beta lactamase (ESBL) enzyme produces by *E. coli* which is capable of hydrolyzing first and third generation cephalosporin, and is inhibited by beta lactamase inhibitor. A total of 150 clinical samples (blood, urine, wound swab, body fluids) were collected from Post Graduate Lady Reading Hospital Peshawar. Different media used were: Nutrient agar, MacConkey agar and cysteine, lactose and electrolyte-deficient agar. *E. coli* gives pink colonies on MacConkey agar because it is lactose fermenter. For further confirmation, different biochemical tests were performed like triple sugar iron, indole and citrate utilization tests. The antibiotics susceptibility and resistivity was checked by disk diffusion method and different antibiotics were used. For extended spectrum beta lactamases (ESBL) detection, combined disk method was performed. In the clinical samples, the percentage of gram positive bacteria in blood was 20%, urine 14.2%, wound swab 83.3%, and body fluids 8%, and the gram negative in urine was 80%, blood 7%, wound swab 10% and body fluids 0%. *E. coli* was more prevalent in urine which was 25 (35.71%) and ESBL producing *E. coli* was 5 (20%). The ESBL producing *E. coli* was resistant to ciprofloxacin (100%), amikacin (40%), amoxicillin+clavulanic acid (40%), levofloxacin (80%), tazobactam+pipracilline (20%), gentamycin (100%), trimethoprim (60%), cefotaxime (100%) and meropenem (0%). Sensitivity toward levofloxacin was 20%, tazobactam+pipracilline 80%, gentamycin 0%, trimethoprim 40%, cefotaxime 0% and meropenem 100%, ciprofloxacin 0%, amikacin 60% and amoxicillin+clavulanic acid 60%. The most effective antibiotic against ESBL producing *E. coli* was meropenem while least effective antibiotics against ESBL producing *E. coli* were gentamycin and ciprofloxacin.

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Genotyping of *cryptosporidium* species isolated from human stool using PCR-RFLP according to *18s rRNA* gene (Shahrekord, Iran)

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Background & Aim: *Cryptosporidium* is an obligatory intracellular-extra-cytoplasmic parasite and also one of the most important pathogens causing diarrhea in human and animals. The aim of this study was investigation of *Cryptosporidium* prevalence in Shahrekord and also determining the most common species causing diarrhea in the district.

Methods: A total 1893 fecal specimens were collected from patients with acute or chronic diarrhea. Samples were stained with modified Ziehl-Neelsen method. Positive samples were collected for *Cryptosporidium* examined by RLFP PCR to detect *Cryptosporidium* species.

Results: In microscopic examination out of 1893 diarrheic fecal specimens, 20 isolates (1.05%) were positive for *Cryptosporidium*. PCR procedure confirmed 17 cases out of 20 positive samples (0.89%), and three positive specimens by Ziehl-Neelsen staining were negative in PCR procedure. The result of RFLP PCR showed that all positive samples were diagnosed as C. parvum.

Conclusion: The results of this study revealed that the frequency of Cryptosporidiosis infection has a higher rate among children. According to type of the parasite isolated in the study (C. parvum), we have to inform local health policy maker to prepare appropriate control programs for this zoonotic parasite.

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Safety and efficacy of liposomal amphotericin B for treatment of complicated visceral *leishmaniasis* in patients without HIV, North-West Ethiopia

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Background & Aim: Visceral leishmaniasis (VL) is a protozoan disease that is fatal if left untreated. The mainstay of treatment in resource limited countries are antimonials, while use of liposomal amphotericin B is reserved for treatment of complicated VL cases. The aim of this study was to assess the safety and efficacy of liposomal amphotericin B in HIV negative VL patients with complications.

Methods: A retrospective chart review was conducted involving records of patients admitted between January 2009 and December 2014. Baseline socio-demographic, clinical and treatment outcome data were collected. The doses of liposomal amphotericin B and adverse events related to treatment were retrieved. Categorical and continuous variables respectively were analyzed by Chi-square and Mann-Whitney U tests. A p-value of less than 0.05 was considered statistically significant.

Results: A total of 147 patients with severe VL were treated with liposomal amphotericin B in total dose ranges of 20 mg/kg to 35 mg/kg. In the overall treatment outcome analysis, initial cure was observed in 128 (87.1%), treatment failures in 10 (6.8%), interruptions in two (1.4%) and deaths in seven (4.8%) patients. Initial cure rate at high dose (24-35 mg/kg total dose) was 96.7% (59/61) versus 80.2% (69/86) at lower doses (<24 mg/kg); which was significantly higher (P<0.01), OR=4.56:95%, Confidence Interval (CI) =1.17-20.78). Nearly 12% of treatment failure occurred in the low dose treatment group. The common adverse events were hypokalemia in 39 cases (26.5%) and infusion related reactions in 16 (10.9%). Hypokalemia and infusion related reactions were not significantly different between the treatment groups.

Conclusion: In HIV negative complicated VL patients, high dose of liposomal amphotericin B was found to have high cure rate at the end of treatment. The appropriate dose for better efficacy needs to be determined. Monitoring serum potassium level is essential during treatment of VL with liposomal amphotericin B.

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Plant made pharmaceuticals for developing countries

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Plant made biologics have elicited much attention over recent years for their potential to assist those in developing countries who have poor access to modern medicine. Vaccines and other biopharmaceuticals derived from plants are inexpensive, lack refrigeration requirements and can be produced en masse in a relatively short period of time. Pharmaceuticals developed in this fashion could be utilized for functions ranging from defense against infectious diseases that have pandemic potential, such as influenza or Ebola virus, to combating orphan diseases which are poorly funded yet remain paramount to global health in their respective endemic regions. Biopharmaceuticals have been generated via a number of plant production platforms, including stable expression in transgenic plants, suspension cell cultures and hairy roots, as well as transiently through the use of plant virus expression vector technologies. The presentation will provide an overview of plant-derived pharmaceuticals and will conclude with a projection of the impact they could have for developing countries.

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The immunologic effect of hemoperfusion with polymyxin B in trauma-induced swine shock model

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Introduction & Aim: Hemoperfusion with adsorption filter is considered to potentially improve the clinical outcomes in septic patients. However, little is known about the effect of anti-inflammation and immune-regulation by this device in traumatic field. The aim of this study is to evaluate the efficacy on early application of adsorption filter in swine trauma model.

Method: Blunt thoracic injury and shock was experimentally made in 10 pigs. Traumatic shock were treated with goal direct therapy based resuscitation (control group, n=5) or plus hemoperfusion with polymyxin–B adsorption filter (HP group, n=5). Hemoperfusion was started at hour 1 after induction of traumatic shock. Blood samples were taken from the animals at baseline, 1 and 7 hours after shock. For anti-inflammatory evaluation, cytokines such as TNF-α, IL-6 were measured by ELISA method and for immunologic analysis, immune cell activities (T lymphocyte subsets, monocyte and natural killer cell) were evaluated with flow cytometry analyses (CD3, CD4, CD8, CD14 and CD56).

Results: Median body weight was 33.1 kg (31.7-38.4 kg). Cytokine study demonstrated that TNF-α and IL-6 were reduced in HP group after 6 hours of hemoperfusion. However, a progressive increase was detected in control group. In activities of T cell lymphocytes subsets (CD3, CD4 and CD8), there was no significant difference between two groups; however, the activities of monocyte (CD 14) and natural killer cell (CD56) were attenuated at 6 hour in HP group, compared to the control group ($p<0.05$).

Conclusions: We suggest that the hemoperfusion with adsorption filter should have a positive anti-inflammatory effect in early phase of traumatic injury. On the other hand, a negative immune-modulation effect might exist by alleviation of innate immune cell activity. However, further investigation will be needed.

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Characterization bioactive constituents of essential oil of *Lavandula angustifolia* Mill: Other treatment against human infections

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Background: Urinary and vaginal infectious diseases reached at high rate, issues of emerging and re-emerging infections due to drug-resistant bacteria becomes a serious danger to human health, medicinal plants constitute a reservoir of bioactive molecules that can kill multidrug resistant microbial infection. In the context of this research, study was intended to characterize molecules bioactive of essential oil and its potentials against urinary and vaginal infections.

Methods: The potential antimicrobial was characterized *in vitro* against 12 reference and clinical multi drug resistant strain encountered in clinical laboratory and the microbiology laboratory of Saidal Medea, Algeria. The minimum inhibitory concentrations (MIC) and the minimum microbicidal concentration (MMC) were determined by disc diffusion assay and agar dilution assay; GC/MS and CPG were utilized to detect the content of bioactive molecule of essential oil.

Results: All strains was appeared sensitive to essential oil of *Lavandula angustifolia* Mill, minimum concentration value was 0.001 v/v can inhibit growth and kill *E. coli* ATCC1536 and *Citrobacter braakii* and *Micrococcus luteus* and *Bacillus subtilis* ATCC6133, *C. albicans* and *C. albicans* ATCC1231. Essential oil presented a good potential biostatic/biocidal. *Lavandula angustofolai* Mill was extremely higher against almost all microbes tested. The composition of bioactive molecule of essential oil was characterized as 45 components made up principally of linalyl anthranilate (31.92%) and linalool (25.63%).

Conclusion: Lavender essential oil possesses strong potential microbicide against the bacterial and fungal human pathogens strains, it can consider as an alternative treatments.

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Distinguishing chikungunya infection from dengue infection among children admitted at a tertiary hospital from 2012-2013 using clinical and laboratory predictors: A retrospective cross-sectional study

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Background: Dengue fever and chikungunya fever are both mosquito-borne illness which have emerged as major infectious diseases especially in the tropical and subtropical regions of the world. Due to similarities in the symptomatology of both chikungunya and dengue fever infections, it is necessary to differentiate the two illnesses clinically and/or by laboratory testing.

Objectives: Aim of this study is to compare the clinical manifestations and laboratory features which would differentiate chikungunya and dengue infections during the acute viremic phase of the illness.

Design: This is a retrospective cross-sectional study of children 18 years and younger diagnosed with chikungunya fever by serum PCR and dengue fever by serum dengue IgM or NS1 seen from January 1, 2012 to January 31, 2013.

Setting: Study was conducted at Makati Medical Center, Makati City, Philippines.

Main Outcome Measure: Selected data on clinical symptomatology, physical examination findings and laboratory examinations were obtained from review of medical charts, laboratory records and physician's records.

Results: Eighteen patients with chikungunya fever and 54 with dengue fever were analyzed for clinical symptomatology; dengue patients were significantly more likely to have mucosal bleeding, fever, abdominal pain and longer illness duration, while chikungunya patients were significantly more likely to exhibit malaise, arthralgia and arthritis. Among the laboratory tests, dengue patients were significantly more likely to have thrombocytopenia (platelets below 100,000), while chikungunya patients were more likely to have an elevated CRP.

Conclusion: Chikungunya patients can be differentiated from dengue patients at presentation to the hospital despite substantial overlap in the clinical symptomatology, physical examination findings and laboratory examinations.

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Evaluation of Xpert MTB/RIF for diagnosis of tubercular lymphadenopathy

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Background: Extra pulmonary TB (EPTB) constitutes 15-20% of all TB cases globally. The most common form of EPTB is lymph node TB (LNTB). Culture remains the gold standard for diagnosis; however, its sensitivity is low. Hence, other modalities are needed for rapid and accurate diagnosis

Materials & Methods: 345 adult patients with lymphadenopathy from outpatient and inpatient departments of AIIMS, New Delhi were recruited between April 2015 and June 2016 after obtaining written informed consent. All patients were subjected to either FNAC or excision biopsy. Zeihl-Neelsen staining, Xpert MTB/RIF, liquid culture by MGIT 960 and histopathology was done and response to treatment was assessed at three months. Xpert MTB/RIF was compared against a composite reference standard (CRS) using standard 2*2 table. Definite cases by CRS were those that were culture positive whereas probable and possible cases included those with symptoms, positive ZN stain or histopathology and those who responded to treatment.

Results: Out of 345, 185 were males and 160 were females with a mean age of 31.69 years. 18 patients were retro positive and 57 patients were treatment experienced. 185 patients underwent FNAC out of which 70 (42.6%) were inconclusive as compared to three (1.8%) in the biopsy group. Among ATT naïve patients which were definite by CRS, Xpert MTB/RIF had a sensitivity of 81.03% (69.15-89.07) with a specificity of 98.01% (94.32-99.32). In ATT experienced definite cases, sensitivity was 77.8% (54.78-91) and specificity was 100% (74.12-100). Similar results were seen in ATT naïve/experienced "probable/possible" cases.

Conclusions: It can be concluded that Xpert MTB/RIF could be used as a rapid and accurate test for diagnosis of LNTB irrespective of prior treatment status of the patient. Also excisional biopsy may be preferred for obtaining samples in patients with easily accessible nodes due to better yield.

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Early versus late antiretroviral therapy in decreasing the incidence of paradoxical immune reconstitution inflammatory syndrome among adolescent and adult patients with HIV-tuberculosis: A meta-analysis

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Research Question: Among patients with HIV-tuberculosis, how effective is late initiation of antiretroviral therapy compared to early initiation of antiretroviral therapy following anti Koch's regimen in decreasing the incidence of paradoxical immune reconstitution inflammatory syndrome (IRIS)?

Background: IRIS is defined as a worsening of existing lesions or presentation of new lesions during treatment of an opportunistic infection most frequently seen among patients on anti-Koch's regimen. Randomized controlled trials showed that delaying initiation of antiretroviral treatment for about four weeks or more after starting anti Koch's regimen showed a decreased incidence of IRIS among HIV patients with concomitant tuberculosis.

Aim: This meta-analysis aims to compare the effects of late initiation of antiretroviral therapy with early initiation of antiretroviral therapy following anti Koch's regimen among patients with HIV-tuberculosis co-infection with primary outcome measured as paradoxical TB-IRIS.

Materials & Methods: Online databases were used to search for randomized controlled trials published from January 2010 to June 2015. Review Manager 5.3 was used to compute for the total odds ratios for both interventions using a fixed-effects model with 95% confidence interval.

Results: Seven randomized controlled trials were included. Late initiation of antiretroviral therapy (>4 weeks following initiation of anti-Koch's regimen) among patients with HIV-tuberculosis was associated with lower odds of developing paradoxical TB-IRIS (OR: 0.54 at 95% Confidence Interval, p <0.00001).

Conclusion: Late initiation of antiretroviral therapy following standard anti Koch's regimen is associated with lower odds of developing paradoxical TB-IRIS, however has been associated with increase in overall mortality as compared with mortality associated with paradoxical IRIS. Baseline CD4+ cell counts <50/ul has been identified as an independent risk factor for both mortality and development of paradoxical TB-IRIS. A larger study population and elimination of probable confounding variables are recommended in future researches.

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Effects of doxycycline on lowering IL-6 and TNF among patients with dengue hemorrhagic fever: A meta-analysis

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Background: Dengue is the most important arthropod-borne viral infection of humans. In general, dengue fever is a disease with a benign course and low fatality rate. However, some of patients progress to a more severe disease characterized by bleeding, hematological abnormalities and plasma leakage. This more severe disease, previously known as dengue hemorrhagic fever (DHF), can lead to circulatory system collapse and death in 2.5-20% of patients. Unfortunately, there is no specific treatment for dengue or its complications. However, treatment by modulation of the cytokine response through use of drugs or antibodies has attracted considerable attention. While various antibiotics have been shown to possess immune modulating activities, those belonging to the tetracycline family appear to have the most promise.

Aim: Aim of this study is to assess the effect of doxycycline on lowering IL-6 and TNF among patients with dengue hemorrhagic fever.

Methods: A systematic review of articles using PubMed was done. Search terms included tetracycline, doxycycline and dengue. RCTs that evaluated the effects of doxycycline on cytokine levels of dengue hemorrhagic fever patients were included. Data extraction was performed by the primary author and reviewed by the co-authors. Studies were assessed for risk of bias using the Cochrane Collaboration tool. Statistical analysis was performed using Review Manager 5.3.

Results: Data was collected from two RCTs. In the pooled analysis using standardized (STD) paired difference in mean, doxycycline was favored in lowering the serum IL-6 and serum TNF, both in day three and day seven post-treatment with p value of < 0.00001.

Conclusions: Our study showed that doxycycline lowered the levels of serum IL-6 and TNF; cytokines were directly implicated in the severe type of dengue. This might translate to better clinical outcome for severely ill dengue patients. Further studies should focus on the overall effect of doxycycline in lowering the mortality rate among dengue hemorrhagic fever patients.

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Detection of mupirocin resistance in methicillin-resistant *Staphylococcus aureus* isolates at Egyptian hospital

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Objective: Topical mupirocin has the power to eradicate nasal carriage of methicillin-resistant *Staphylococcus aureus* (MRSA). However, mupirocin resistance has been increasingly reported. The aim of this study was to determine the prevalence of mupirocin resistance in MRSA isolates from clinical and nasal samples by conventional and molecular methods and to test their susceptibility to other antibiotics.

Materials & Methods: A total of 60 MRSA non-duplicate isolates were included in this study, 14 from surgical wounds, 16 from urinary tract infections from patients admitted to Suez Canal University Hospital, Ismailia, Egypt, as well as 30 nasal swabs, obtained from health care workers. The minimum inhibitory concentrations (MICs) for MRSA isolates to mupirocin were assessed using E-test method and polymerase chain reaction (PCR) targeting *MupA* gene was performed.

Results: Using E-test, six isolates out of 60 MRSA (10%) exhibited high level resistance to mupirocin and only one isolate (1.6%) exhibited low level mupirocin resistance. Four isolates out of six MRSA that exhibited high level mupirocin resistance carried *MupA* gene. All seven isolates (11.6%) that showed mupirocin resistance were from nasal carriers. Compared to mupirocin-susceptible strains of MRSA, strains with mupirocin resistance strains were more likely to be resistant to tetracycline, chloramphenicol, gentamycin, ciprofloxacin and trimethoprim-sulfamethoxazole.

Conclusion: The prevalence of high-level mupirocin resistance (10%) and low-level resistance (1.6%) in MRSA in our institution is a cause for concern. Hence, it is recommended that routine testing of MRSA for mupirocin resistance be conducted even in facilities where mupirocin is not prophylactically administered.

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Adenovirus-rough and tough: Successful treatment of disseminated adenovirus infection in two solid organ transplant recipients

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Adenovirus is a DNA virus that causes infections of the respiratory tract, gastrointestinal tract, conjunctiva and rarely urinary or neurological systems. Disease caused by adenovirus is usually self-limiting but it can cause disseminated infection with high morbidity and mortality. We presented two cases of transplant recipients who developed disseminated adenovirus infection and were successfully treated on a compassionate basis with the investigational drug brincidofovir. The first patient was a 47 year old female with kidney/pancreas transplant done six months prior to presentation who was admitted with hematuria for nine days, fever and acute kidney injury. A cystoscopy was done which revealed erythema in the bladder and transplant ureter. Biopsy of transplanted kidney was PCR positive for adenovirus and had changes consistent with adenovirus tubulo-interstitial nephritis. Due to pancytopenia, she underwent a bone marrow biopsy which was PCR positive for adenovirus. She was started on cidofovir but quickly developed worsening renal failure; hence she was switched to brincidofovir. Within three weeks of starting treatment, her symptoms resolved and adenovirus PCR was negative in urine. Unfortunately, her renal function did not improve and she remained on hemodialysis. The second patient was a 46 year old African American female who underwent deceased donor kidney transplant (DDKT) four months prior to presentation. She presented with fever for two days, abdominal pain and non-bloody watery diarrhea. Temperature was 103 F and she had pancytopenia. On labs, pertinent negatives included urine culture, blood culture, serum PCR for CMV and EBV and stool studies. Adenovirus was detectable by PCR in urine and was positive in blood with 11,571 copies detected. Due to pancytopenia, she had a bone marrow biopsy which was PCR positive for adenovirus. She was diagnosed with disseminated adenovirus infection and was initiated on brincidofovir with improvement in fever and diarrhea. Due to our experience with the first patient, we were hesitant to initiate cidofovir. At one month follow up, blood cell counts had improved and adenovirus PCR in blood and urine were both undetectable. Brincidofovir is an investigational drug that is an oral lipid formulation of cidofovir and is less nephrotoxic. Our center has had positive experiences with the compassionate use of this agent. Polymerase chain reaction testing (PCR) is useful for diagnosis as it is highly sensitive and specific. Due to significant morbidity and mortality as well as limited data on prevention and treatment, it is important to consider adenovirus as a causative infectious agent in solid organ transplant patients who present with fever of unknown origin, pancytopenia and hemorrhagic cystitis. It is critical to rule out disseminated adenovirus disease, reduce immunosuppression where possible, and consider starting anti-viral therapy early. Brincidofovir is currently in phase three clinical trial for adenovirus infections.

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The game changers; breaking through resource limitation to Ebola control by community structures: The case of Bombali district – Sierra Leone

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Introduction: In December 2013, Ebola Virus Disease (EVD) started terrorizing West Africa affecting seven countries though Guinea, Liberia and Sierra Leone as the most hit with a total of 28610 cases and 11308 deaths as on 30/3/2016. Sierra Leone contributed 50% of cases and 35% of deaths. Epidemiological and public health interventions by "conventional" experts did not yield quick containment. This innovation was a desperate epidemiological and public health move to reorganize surveillance to the village level and provide resources to aid response by communities themselves in Bombali district since the epidemic was far stretching and resource intensive.

Methods: This was an epidemiological and public health innovation in all 13 chiefdoms of Bombali district in Northern Sierra Leone. Dialogue meetings were carried out with each of the 13 chiefdom councils to discuss and establish Village Task Force on Ebola (VTFE) and response structure committees. Recruitment and training of the VTFE and response structures committees' volunteers was done. Support supervision and monitoring of activities by the volunteers was done.

Results: Each of the 13 chiefdoms of Bombali district formed the following Ebola response structures with their respective responsibilities; Chiefdom Ebola Task force that over saw EVD activities in the chiefdom, social mobilization committee which sensitized and mobilized communities to respond to Ebola, security committee which was dedicated to biosecurity of the chiefdom and finance and logistics committee which mobilized resources. Each Village in Bombali district formed a Village Task force on Ebola that reported on village health status on daily basis to the Chiefdom Ebola Task force who in turn reported to the district Ebola response and command centre. Community denial of EVD reduced leading to more early and self-reporting of EVD suspected cases hence increased survival. The community mobilized response resources and constructed local isolation shelters consequently EVD cases started to drop from December 2014 to the end of the outbreak.

Conclusion: Village level community surveillance in wide spread epidemics and constrained economies contributes to human resource support, community cooperation, early identification, early reporting and isolation of cases. Community response structures contribute to biosecurity and mobilization for response.

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A critical appraisal of tubercular lesions of the breast: A pathologist's perspective of diagnostic challenges

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Statement of the Problem: India is a developing country where tuberculosis (TB) is endemic with both pulmonary and extra pulmonary manifestations of the disease. Tuberculosis has been recognized as an affliction with an enormous impact in terms of morbidity, mortality and economic cost. TB affects primarily the lungs, however extra-pulmonary TB involving lymph nodes, intestine and spine are also common. TB of breast is remains extremely rare even in developing countries where pulmonary and other forms of extra pulmonary manifestations of TB are endemic. Breast tuberculosis is a rare presentation and its importance lies in the fact that it may mimic malignancy or present as inflammatory lump/abscess.

Aim: The purpose of the present study is to highlight the importance of breast TB, and its diagnostic challenges.

Methodology & Theoretical Orientation: It was a retrospective study conducted at Hamdard Institute of Medical Sciences and Research & associated Hakim Abdul Hamid Centenary Hospital, New Delhi, over a period of two years between 2013 and 2015 during which eight cases of breast lesions were diagnosed as tuberculosis.

Findings: Granulomas were seen in five cases while three cases revealed only few epithelioid cells. Necrosis was seen in all cases. Histopathological evaluation was available in six cases, while acid fast bacilli (AFB) were positive in three; the characteristic granulomas were seen in all the six cases.

Conclusion & Significance: Its importance lies in the fact that due to its infrequent occurrence and the chances of a mistaken identity with other disease, it entails a high index of suspicion. The disease is clinically known to simulate many diseases of breast like carcinoma, abscess, chronic granulomatous inflammation, and chronic non-specific inflammation and duct ectasia. In developing countries like India, clinical history and cyto-morphological features of epithelioid cell granulomas with or without necrosis and AFB negative on FNAC smears, a therapeutic trial of antitubercular drugs may be instituted.

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