

E-POSTERS

Abstracts



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MEAN PLATELET VOLUME IN NEONATAL SEPTICEMIA

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The aim of this study was to study mean platelet volume (MPV) in neonatal septicemia. In 40 cases of clinically suspected neonatal septicemia, the baseline MPV level was evaluated to determine septicemia in which 65% of cases had baseline MPV levels (≥ 10.35 fl) and 35% of cases had baseline levels (< 10.35 fl). The sensitivity, specificity, positive and negative predictive values of MPV (≥ 10.35 fl) in neonatal septicemia was 94.7%, 61.9%, 69.2% and 92.9% with the accuracy of 77.5%. So, the baseline MPV value of ≥ 10.35 fl, relied on higher sensitivity, NPV and good accuracy, and is useful as a screening, auxiliary test in addition to CRP at both diagnosis and response to anti-microbial treatment in neonatal septicemia. As for the outcomes of septicemia, significant relation was noted between normal outcomes and eleven babies (64.7%) with low MPV levels (< 10.35 fl) ($P=0.001$). Twelve babies (92.31%) who suffered from severe parenchymal lung disease also had significantly higher MPV levels (≥ 10.35 fl) ($P=0.031$). Therefore, higher MPV levels were found to be related to severe parenchymal lung disease and lower MPV levels to normal outcomes.

Biography

Nay Myo Wai completed his MBBS degree in 2009 and MMedSc (Pathology) in 2017 from University of Medicine, Mandalay. Currently, he is Residential Pathologist at 550 bedded children Hospital in Mandalay. During MBBS course, he won Gold medal prizes in Pathology for two successive years (2006 and 2007) and also Highest Mark prize in Microbiology (2006). He also got third prize in paper presentation for his dissertation at Myanmar Medical Conference in Jan' 2018.

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***IN VITRO* SUSCEPTIBILITY OF COMMONLY USED ANTIBIOTICS AGAINST *VIBRIO PARAHAEMOLYTICUS*, ISOLATED FROM FIN FISHES, CHENNAI, INDIA**

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The main aim of this study is to determine the antibiotic profile of *Vibrio parahaemolyticus* isolated from fin fishes collected from three major fish landing sites in Chennai, India. A total of 112 fin fish samples were screened for Gram-negative halophilic bacterium *V. parahaemolyticus* that included 30 of Red snapper (*Lutjanus campechenus*), 40 of Indian sardine (*Sardinella longiceps*) and 42 of Rohu (*Labeo Rohita*) on the skin surface was compared using commonly used antibiotics. Thirty two samples were found to be positive. To detect the pathogenicity of the identified isolates Kanagawa reaction was performed. Among 32 isolates, 5 were found to be positive for Kanagawa reaction. The *in vitro* susceptibility of *V. parahaemolyticus* was studied by disk diffusion method using disks contained Doxycycline, Ofloxacin, Cefazolin, Clindamycin, Gentamycin and Chloramphenicol. The isolated *V. parahaemolyticus* strains showed high degree of sensitive to Doxycycline and Ofloxacin.

Biography

He received his Bachelor of Science (BSc), in field of clinical microbiology, from the Punjab technical University, Punjab, in 2010. He completed his Master of Science (MSc), in field of Microbiology, from the Vinayaga mission University, Salem, Tamilnadu in 2012 and then he joined as a part-time faculty of microbiology lecturer at Southern college in Chennai. Presently he is pursuing PhD research scholar (Part-time) in field of marine biotechnology at AMET University, Chennai. His research interest is Antibacterial activity of selected plant extract against *Vibrio* pathogen specifically on dosage formulation and drug resistance pattern analysis and his research also focusing detailed investigations on safety and toxicity of the plant extracts to confirm their therapeutic efficacy in suitable vivo model.

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RETROSPECTIVE ASSESSMENT OF SPECIFIC EFFECTS OF OCCUPATIONAL EXPOSURE OF WORKERS TO PCBS IN SLOVAK REPUBLIC

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Introduction and Objective: Polychlorinated biphenyls (PCBs) have been used commercially since 1929 as dielectric and insulating non-flammable substances, additives for paints, petc. In Slovakia, 60 chemical production workers highly exposed to PCBs (mainly to Delor 103) were studied with duration of exposure ranging from 3 months to 19 years.

Materials and Methods: Clinical examinations of skin, skin histology and laboratory tests concerning lipid metabolism, iron metabolism and levels of copper provided comparisons with a control group of healthy individuals and/or the upper limits of normal values.

Results: Skin changes were found in 47 % of individuals. In most cases milia-like efflorescences (57.14 %) occurred, as well as comedones (55.35 %); other symptoms occurred in a smaller number. Hyperkeratosis, acanthosis of the epidermis (particularly in hair follicles) and a cellular infiltration of the corium were all found through histology. The intensity of cutaneous affections was associated with the changes in laboratory tests. Elevated triglycerides, cholesterol, and phospholipids were found in exposed workers. After a further two years, a significant increase in triglycerides was found in exposed individuals when compared with the control group. In addition, a significant increase in serum levels of copper, and total and unsaturated iron-binding capacity was detected.

Conclusions: Anamnesis showed that some people occupationally exposed to PCBs may develop skin changes after three months of excessive occupational exposure. The results represent a unique snapshot of worker exposure to on given location, representing the basis for comparison with population grew up in the area and live there to this day.

Biography

Associate Professor DVM Tatiana Kimáková, PhD. – published over 370 papers, presented over 160 scientific and scientific lectures home and abroad, more than 230 citations. Professor MUDr. Vladimír Bencko, DrSc. – from 1990 he was the head of the Institute of Hygiene and Epidemiology of the 1st Medical Faculty of Charles University, his written output remains prolific, with 226 WoS registered publications and a citation index of 5804 and h-index of 39

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IMMUNOLOGICAL STRUCTURE OF PERTUSSIS IN POPULATION OF LVIV REGION

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According to literature, in close contact within family circle, adults having typical and especially atypical forms of pertussis might be a source of infection for children.

Aim: To carry out serological surveillance among adult population in order to quantify pertussis immunoglobulins G (IgG).

Materials & Methods: The study of the immunological structure of adult population concerning pertussis germ has been carried out on 80 people over the age of 18. The level of specific antibodies has been identified by ELISA test-system sero pertussis tm IgG enzyme-linked immunosorbent assay (ELISA) Savyon Diagnostics Ltd, Israel. The study has been conducted in four age groups: 18-25, 26-40, 41-55 and over 55 years old. Statistical processing of data was obtained by means of intensive, extensive and mid-values assessment using Mann-Whitney U test. Anti-pertussis immunity stress level was estimated by such criteria: up to 9.9 BU/ml-antibody-negative people; 10.0-49.0 BU/ml-antibody-positive people, those whose antibodies indicate that the person has already suffered from pertussis or has received immunization; 50 BU/ml and more highly positive antibodies level indicating the period of recovery from pertussis (according to manufacturer's instruction).

Results: The number of antibody-negative population is 50%. High titres of specific immunoglobulins G were identified in 3.75% of people, which indicates the period of recovery from pertussis. There were no important differences found in the levels of immunoglobulins G between the population of cities and villages.

Conclusions: Usage of this method proves that there are cases of adults suffering from pertussis, which are caused by the lack of awareness of health care professionals about case rate of pertussis in the particular age group. The fact that there are antibody-negative adults proves the necessity of anti-pertussis revaccination of the adult population.

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EFFECTS OF SELECTIVE LESIONS OF THE MEDIAL SEPTAL NEURONS ON EXPLORATORY BEHAVIOUR AND RECOGNITION MEMORY

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Investigation of cholinergic system and memory interaction has especially become the object of scientific attention due to the clinical and experimental data, in which the severity of dementia in Alzheimer's disease (AD) was found to have a positive correlation with the extent of the cholinergic loss. The animal models of cortical and hippocampal cholinergic depletion have been widely used to induce relevant cognitive deficits for the purpose of identifying potential new therapeutic compounds for the treatment of AD. The septum is connected to the hippocampus via the fimbria-fomix, these projection are predominantly cholinergic and GABAergic. Lesions of the fimbria-fomix, or electrolytic lesions of the MS, impair hippocampal-dependent learning and memory. The observation of similarities between cognitive processing in the rat and human is important, but the development of a reliable rat model of recognition memory deficit also provides a powerful tool for development of drugs for AD and neurodegenerative diseases. The purpose of this study was to investigate ability to acquire and use spatial (or non-spatial) information as well as to habituate exploratory activity over time in sham-operated, electrolytic, neuro- or immunotoxic MS lesioned rats. The animals were randomly assigned to different experimental groups. Animals were tested in an open field. Our results indicated that: MS is sufficient for spatial recognition, but is not sufficient for object recognition memory; the selective loss of septohippocampal cholinergic or noncholinergic projections does not disrupt the function of the hippocampus to a sufficient extent to impair spatial recognition memory. Therefore, the present study demonstrates dissociation between the two major components (cholinergic and noncholinergic) of the septohippocampal pathway in exploratory behaviour assessed in the open field.

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STRESS MAY INFLUENCE HOST RESPONSE FOLLOWING SURGERY. CAN WE PREDICT POSTOPERATIVE INFECTION BENEFICIAL OR HARMFUL?

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Background: In 1891, William B Coley injected streptococcal organisms into a patient with inoperable cancer. He thought that the infection he produced would have the side effect of shrinking the malignant tumour. To investigate this question, the following experiment was performed.

Hypothesis: Surgical infection may improve host response.

Methods: 55 urinary bladder cancer patients, with radical cystectomy and lymphadenectomy were studied. Blood samples were taken on day 0 (before) and day 1, 3, 6, 9 and 14 after operation and a five year follow up was done. TNF α , soluble TNF α receptor I and IL-6 levels in sera were determined by HS ELISA and/or ELISA kits. Plasma cortisol values were measured by RIA kits.

Results: From 55 patients, 23 infected (wound and urine infections) were found in 30 days after surgery, seven died in five years due to the metastatic tumor. All patients were bacterially contaminated, as wound samples taken at the end of operation demonstrated. Despite this fact, 21 patients remained aseptically and seven died due to the metastatic cancer. On the day 0, the circulating TNF α values were lower in infected patients. TNF started to increase from day 3 till day 9 never reaching values of uneventful healing group. If no increase in TNF α production 5 patients died due to the sepsis. Rest of the patients received no total cystectomy. Soluble TNF receptor I, IL-6 and cortisol concentrations did not demonstrate any difference on day 0 except cortisol what was higher in septic patient however, from day 1 started to increase transiently, reaching higher levels in septic patients.

Conclusions: A low pro-inflammatory response is a key facilitating factor for the development of infection. Thus measuring serum TNF α level before and after operations can predict the outcome. The infection may improve host response. However, the postoperative infection is a double edge sword that can result in a severe sepsis and/or can improve immune response improving the outcome from operation and/or from tumor disease.

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DISSECTING THE GENETIC BASIS OF SWARMING MOTILITY IN *PSEUDOMONAS AERUGINOSA* BY TRANSPOSON MUTAGENESIS TECHNIQUE

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Swarming motility plays important roles in the pathogenicity of *Pseudomonas aeruginosa*, a frequent opportunistic human pathogen. Bacterial swarming is coordinated by quorum sensing, a cell-to-cell communication mechanism which regulates virulence gene expression depending on cell population density. The global post-transcriptional regulator RsmA is essential for this phenotype. Intracellular levels of the signal molecule c-di-GMP appear to modulate motility and attachment phenotypes, as expressing c-di-GMP phosphodiesterases can compensate a loss of RsmA function. However, the molecular role of this signalling molecule and its interaction with RsmA and quorum sensing system is not yet well understood. It is hypothesized that elevated level of c-di-GMP inhibits swarming in *rsmA* mutants. The major goal of this study was to identify potential c-di-GMP receptors mediating this control. This study identified a set of genes potentially coding for proteins acting as such c-di-GMP receptors by using random transposon mutagenesis technique. Four genes disrupted by transposon insertion were found to restore swarming in an *rsmA* mutant: *rhIC*, encoding for a rhamnosyltransferase involved in the production of rhamnolipid biosurfactants; *mexT*, a transcriptional regulator controlling multi-antibiotic efflux systems, *cupA3* encoding a fimbrial biogenesis usher protein involved in surface attachment and PA3866 encoding a bacteriocin. In addition, the investigation of the roles of a variety quorum sensing signalling molecules on the restoration of swarming motility in a signal-less mutant was carried out. It was found that the fatty acid chain lengths of N-acyl-homoserine lactones (AHLs) have important roles in controlling the swarming network. AHLs with long fatty acid chain lengths were not found to act as biosurfactants during swarming.

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IMMUNOSTIMULATION AND ENERGY FOR CHEMICALS WITH IMMUNOSTIMULANT ACTIVATED (ITA)

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Introduction: The β -glucuronidase is an agent stimulant of the immune system and has a desensitizing action under normal pH. This substance has an important role as immune response modifier that stimulates the expression of adhesion molecules by antigen-presenting cells in contact with lymphocytes and *vice versa* in the intra cellular space and acts on the balance shift TH2/TH1 responses. Method with proven security, without cases of deaths to this date and large scale in Brazil since the early of the 90's was considered. However, there are few available randomized double-blind studies. Therefore, scientific elucidation is essential. New evidences brought by new and validated clinical studies will allow us to confirm that this therapeutic method can be more effective and safer for the immune compromised patients and with hypersensitivity not only type I of Gell and Coombs.

Case Description: A 53 year old female patient Lausivan Martins De Miranda, Caucasian, farm labourer is reported to doctor's office complaining of itching dermatological diffuse for one year and eight months, associated with urticariformes boards, angioedema on hands and lips, diffuse rash and aphonia. She is on recurrent use of doxepin 10 mg and bilastine 20 mg without any success. She denies social addictions and makes regular use of propranolol and chronic of metformin, aldactone, furosemide and NPH insulin, due to metabolic syndrome and hypertension. No history of hospitalizations, surgeries, adverse reactions to drugs, vaccines and atopsics was found. Physical examination with exanthematous and hives urticaria diffusely distributed and aphonia. Still, BMI is greater than 35. Blood tests without notable changes and Patch test with positive results are for: nickel sulfate (+ +), cobalt chloride (+ +) and parfum mix (+ +) and diagnosis of allergic contact dermatitis as well.

Immunological Aspects & Conclusions: Patient began the immunostimulation therapy in low doses with β -glucuronidase, β -glucan and nickel sulphate, bimonthly (every two months) and obtained tolerance and energy after the first three doses. After six months, there was a great reduction of emergency medications and finally a substantial increase in the quality of life without the total exclusion of the triggering chemicals contactants. Immunostimulating subcutaneous therapy as proposed in the case, according to protocol and subcutaneous administration ITA bimonthly of β -glucan and β -glucuronidase associated with specific antigens in low dose showed great results providing an increase of antigenic recognition because of an efficient activation of antigen presenting cells through up-regulation of their receivers. Thus, the activation and degranulation of inflammatory products that cause various clinical manifestations are minimized and regulated, with the consequent clinical improvement despite associated medications and chemical environmental exclusion. Therefore, a great alternative for immune compromised patients and with several kinds of hypersensitivity should be taken.

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THE ROLE OF SURFACE ADHESINS IN *CLOSTRIDIUM DIFFICILE* VIRULENCE AND BIOFILM FORMATION: COMPARISON BETWEEN A NON-EPIDEMIC AND AN EPIDEMIC STRAIN

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C. *difficile*, the causative agent of severe inflammation of the bowel (pseudomembranous colitis), has become the most significant nosocomial antibiotic-associated diarrhoea (CDAD) reported worldwide. Recurring infections and increasing antibiotic resistance have complicated treatment of *C. difficile* infection (CDI). While there is a growing concern of increased incidence and severity of CDI reported in Europe and North America, it is important to determine the prevalence of CDI, its toxinotypes and antimicrobial resistance pattern in the Middle East. In this study, we review important epidemiologic aspects of CDIs in hospitalized patients in this region. Whilst the two major virulence factors, toxins A and B, are widely recognized as essential for *C. difficile* virulence, and spores are important for transmission and persistence of infection, other virulence-associated factors such as intestinal colonization and formation of biofilm in the gut undoubtedly contribute to virulence and persistence, but the mechanisms involved in this process have not been well characterised. This study showed that clinical *C. difficile* strains, in particular a UK-outbreak, PCR-ribotype 027 (B1/NAP1) strain forms complex, structured biofilms *in vitro*. We then investigated the role of selected virulence-associate clostridial proteins in biofilm development, and find that surface factors such as the flagellum and cwp84, a major cysteine protease that is required for the maturation of the S-layer, are all important for biofilm development. Moreover, this study demonstrated that these biofilms formed by this bacterium can resist high concentrations of vancomycin, an antibiotic that is currently used in treatment of *C. difficile* infections. Finally, this study also observed differences between the ability of epidemic hypervirulent and non-epidemic strain in adherence and intestinal colonization. We showed that the flagellar proteins of hypervirulent strain function as surface adhesins in mediating attachment to human intestinal cells, the first step in intestinal colonization.

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A DIAGNOSTIC ACCURACY STUDY: COMPARISON OF TWO DIFFERENT MOLECULAR BASED TESTS (GENOTYPE HELICO-DR AND SEEPLEX CLAR-*H. PYLORI*-ACE DETECTION), IN THE DIAGNOSIS OF *HELICOBACTER PYLORI* INFECTIONS

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Aim: The aim of this study was to compare the diagnostic values of two different molecular based tests (GenoType® HelicoDR vs Seeplex® *H. pylori*-Clar- ACE Detection) in detection presence of the *H. pylori* from gastric biopsy specimens. In addition to this, we also aimed to determine resistance ratios of *H. pylori* strains against to clarithromycin and quinolone isolated from gastric biopsy material cultures by using both the genotypic (GenoType® HelicoDR, Seeplex® *H. pylori*-Clar-ACE Detection) and phenotypic (gradient strip, E-test) methods.

Material & Methods: A total of 266 patients who admitted to Konya Education and Research Hospital, Department of Gastroenterology with dyspeptic complaints, between Jan' 2011-Jun' 2013, were included in the study. Microbiological and histopathological examinations of biopsy specimens taken from antrum and corpus regions were performed. The presence of *H. pylori* in all the biopsy samples was investigated by five different diagnostic methods together: culture (C) (Portagerm pylori-PORT PYL, Pylori agar-PYL, GENbox microaer, bioMérieux, France), histology (H) (Giemsa, Hematoxylin and Eosin staining), rapid urease test (RUT) (CLOtest, Cimblerly-Clark, USA) and two different molecular tests; GenoType® HelicoDR, Hain, Germany, based on DNA strip assay, and Seeplex® *H. pylori*-Clar- ACE Detection, Seegene, South Korea, based on multiplex PCR. Antimicrobial resistance of *H. pylori* isolates against clarithromycin and levofloxacin was determined by GenoType® HelicoDR, Seeplex® *H. pylori*-Clar- ACE Detection, and gradient strip (E-test, bioMérieux, France) methods. Culture positivity alone or positivities of the both histology and RUT together was accepted as gold standard for *H. pylori* positivity. Sensitivity and specificity rates of two molecular methods used in the study, were calculated by taking the two gold standards previously mentioned.

Results: A total of 266 patients between 16-83 years old, out of which 144 (54.1%) were female, 122 (45.9%) were male were included in the study. 144 patients were found as culture positive and 157 were H and RUT were positive together. 179 patients were found as positive with GenoType® HelicoDR and Seeplex® *H. pylori*-Clar-ACE Detection together. Sensitivity and specificity rates of studied five different methods were found as follows: C were 80.9% and 84.4%, H + RUT were 88.2% and 75.4%, GenoType® HelicoDR were 100% and 71.3%, and Seeplex® *H. pylori*-Clar- ACE Detection were, 100% and 71.3%. A strong correlation was found between C and H+RUT, C and GenoType® HelicoDR, and C and Seeplex® *H. pylori*-Clar-ACE Detection ($r=0.644$ and $p=0.000$, $r=0.757$ and $p=0.000$, $r=0.757$ and $p=0.000$, respectively). Of all the isolated 144, *H. pylori* strains, 24 (16.6%) were detected as resistant to clarithromycin and 18 (12.5%) were levofloxacin. Genotypic clarithromycin resistance were detected only in 15 cases with GenoType® HelicoDR and 6 cases with Seeplex® *H. pylori*-Clar- ACE Detection.

Conclusion: In this study it was concluded that GenoType® HelicoDR and Seeplex® *H. pylori*-Clar-ACE. Detection was found as the most sensitive diagnostic methods when compared to all the investigated other ones (C, H, and RUT).

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COMPARISON OF BACTEC PLUS BLOOD CULTURE MEDIA TO BACT/ALERT FAN PLUS BLOOD CULTURE MEDIA FOR IDENTIFICATION OF BACTERIAL PATHOGENS IN CLINICAL SAMPLES CONTAINING ANTIBIOTICS

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Aim: In this study, we aimed to compare aerobic and anaerobic BacTec Plus blood culture bottles containing Resin and BacT/Alert Plus blood culture media containing polymeric beads in terms of microorganism detection rates and time to detection in septic patients receiving antibiotic therapy.

Material and Methods: Blood culture samples were taken from the patients who are under antibiotic therapy in the intensive care unit (ICU). The samples were equally inoculated on Bactec Plus aerobic (BA), Bactec Plus anaerobic (BN), BacT/Alert Plus aerobic (FA Plus) and BacT/Alert Plus anaerobic (FN Plus) culture media. Bactec Plus and BacT/Alert Plus media were compared in terms of culture positivity rates and isolation durations.

Results: Bacterial or fungal isolates of 176 (3.92%), 144 (3.21%), 154 (3.43%) and 126 (2.81%) were detected in the total of 4480 BA, BN, FA Plus and FN Plus blood culture bottles analyzed respectively. Microorganism growth rate was higher in Bactec (BA and BN) culture bottles compared to those in the BacT/Alert (FA Plus and FN Plus) culture bottles. In Bactec Plus culture media, time to detection was found lower than that of BacT/Alert Plus culture media.

Conclusion: The results of this study showed that resin-containing media is a reliable and time-saving tool for patients who are receiving antibiotic treatment due to sepsis in the ICU.

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PATHOLOGIC ISSUES IN INTERPRETATION OF PROSTATE NEEDLE CORE BIOPSIES IN DEVELOPING COUNTRIES: MULTICENTER RETROSPECTIVE ANALYSIS

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Background: Current cancer register of Uzbekistan demonstrates that prostate cancer is the 5th leading cause of mortality. The lower incidence of disease in comparison with European countries could be due to the gaps in diagnosis, especially in pathology. Discovering the most useful and at the same time financially effective amount of immunohistochemistry (IHC) markers remain as the challenged topic in developing countries.

Purpose: The objective of this study is to evaluate the use of the p63 and AMACR in clarifying suspicious foci in prostatic needle biopsy specimens.

Materials: A total of 180 cases are selected from Jan'2017 to Oct' 2018. All cases were reviewed and divided into three groups. Benign (85), cases with suspicious foci (23 cases) and malignant (72 cases). IHC was carried out using monoclonal AMACR and p63 antibodies in the 23 suspicious cases along with positive and negative controls.

Results: This study showed AMACR had a sensitivity of 92%, specificity of 94%, whereas p63 had a sensitivity of 94%, specificity of 100%. All the 23 suspicious cases were resolved by using a combination of morphology and IHC expression p63 and AMACR. In nine cases (9/23), diagnosis was changed from the benign to malignant. In two cases, benign to high grade prostatic intraepithelial neoplasia (2/23) and in five cases from malignant to benign (5/23). This change was statistically significant with P value of 0.0011.

Conclusions: Histopathological examination is the gold standard and ordering immunohistochemistry prospectively is not necessary in all cases of prostatic needle biopsies. Our recommendation is the use of p63 in cases of morphologically ambiguous prostate biopsies and take into account that if expression would be aberrant (which occurs in <1%) than go to AMACR and accordingly utility of just one IHC marker would be economically beneficial for countries with limited financial resources.

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MOLECULAR DETECTION OF XDR AND MDR *MYCOBACTERIUM TUBERCULOSIS*

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Tuberculosis (TB) is an important public health. *Mycobacterium tuberculosis*, the etiological agent of tuberculosis is responsible for maximum mortality by infection diseases globally. Increasing the transmission of MDR and XDR strains of *Mycobacterium tuberculosis* has created a challenge for effective treatment and disease control. MDR and XDR strains of *Mycobacterium tuberculosis* evaluate and diagnose different types of mutations in the *katG*, *rpoB*, *rrs* and *gyrA* genes. Drug susceptibility testing for Isoniazid, Rifampin, Kanamycin, ethambutol and Streptomycin was performed using the agar proportion method. The regions of *katG*, *rpoB*, *rrs* and *gyrA* genes in the MDR and XDR strains are sequenced by PCR and sequencing results at NCBI, BLAST. There is a relationship between the presence of resistance phenotypes and genetic mutations. Common mutations are found in the studies. The sequencing of specific regions of target genes is useful for detecting MDR and XDR strains and is also valuable for the design of novel diagnostic techniques.

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A LONG-TERM CHRONIC SCROTAL ACTINOMYCOSIS IN A MIDDLE-AGED PATIENT IN KERMAN: A CASE REPORT

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Actinomyces species are non-spore forming Gram-positive bacilli. They are part of human/animals' micro-flora and are also among soil inhabitants. Actinomycosis is an opportunistic, indolent, slow growing, chronic progressive and granulomatous infection caused primarily by *Actinomyces israelii*. Less than 100 cases of *Actinomyces neuii* isolates have been reported in the literature. Our case is a 47-year-old man who recognized two painless nodules in his scrotum six months after military training. He did not reveal his problem. Ten years later, both lesions got inflamed and ruptured. He had been treated empirically. About 15 years later, the inflammation reappeared along with general sign and symptoms of acute disseminated infectious disease. In microbiological examination, *Actinomyces neuii* was isolated from purulent aspirate of scrotal lesions. Along with surgical drainage of abscess, he was treated with antibiotics. Physicians must remember that chronic, not purulent lesions of *Actinomyces* may be misdiagnosed with malignancies, too. Some patients like our case may ignore mild sexual disease for its anatomic site. This ignorance may lead to a severe infection.

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HUMAN PAPILLOMAVIRUS INFECTION IN GENITAL WOMEN IN FOUR REGIONS OF SENEGAL

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Introduction: Cervical cancer is the most frequent cancer among women in Senegal. However, there are few data concerning the HPV types inducing neoplasia and cervical cancers and their prevalence, in the general population of Senegal

Aims: The aim of this study is to determine the prevalence of HPV infection in Senegalese women aged from 18 years and older.

Materials & Methods: A study was performed on 498 cervix samples collected from healthy women aged 18 and older in Dakar. 438 other samples were collected from three other regions, Thiès, Saint Louis and Louga. The samples were screened for 21 HPV genotypes using an HPV type-specific E7 PCR bead-based multiplex genotyping assay (TS-MPG) which is a laboratory-developed method for the detection of HPV.

Results: The prevalence for probable high risk/high risk HPV (pHR/HR-HPV) in the region of Dakar was 20.68%. HPV 52 (3.21%) was the most prevalent HPV type, followed by HPV 16 (3.01%) and HPV 31 (3.01%). In the regions of Thiès, Louga and Saint Louis, the prevalence for pHR/HR-HPV was 29.19%, 23.15% and 20%, respectively

Conclusion: The study revealed the specificity of the HR-HPV prevalence in Dakar and other regions of Senegal. The patterns differs from the one observed in the other regions of the world and raise the issue of the development of vaccination program in the country. Such a program should take into account the real HPV prevalence for an effective protection of HPV-associated diseases.

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COVERAGE OF SAFE MALE CIRCUMCISION (SMC) PER ELIGIBLE POPULATION IN UGANDA, 2013-2018: ANALYSIS OF UGANDA'S SMC DATA FROM DHIS2

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Introduction: Use of cumulative number of circumcisions as a measure of success of SMC scale up may not indicate how well access risky populations are receiving this intervention.

Objective: To determine the number of circumcisions per male population, and ascertain if circumcisions conducted in Uganda between the period Jul' 2013-Mar' 2018 are associated with key risk sexual behaviours, HIV and STI prevalence, and urbanization.

Method: Circumcision data is accrued from DHIS2 and HMIS for the period Jul' 2013- Mar' 2018, while data on adult male HIV prevalence, SMC coverage, multiple partners and prevalence of syphilis men are obtained from Uganda Population HIV Impact Assessment report. The average number of district quarterly circumcisions per calendar year was determined using a random-effects Poisson regression model. We obtained regional and district level factors associated with the number of circumcisions. Measure of association was incidence rate ratios (IRR) from this Poisson model, with corresponding 95% confidence intervals and p-value. Key variables were adjusted to provide adjusted (adj.) IRR.

Summary of key findings: Nearly four million circumcisions were conducted between Jul' 2013-Mar' 2018, districts averaged only 15 (13.3,16.5) circumcisions per 1000 males quarterly, after controlling for male population, regional, district factors and calendar year. Circumcisions were higher in districts located in regions with high-risk sexual behaviour and high prevalence of syphilis as an important co-factor for HIV infection, circumcisions were lower in rural districts located in regions with a high adult male HIV prevalence compared to low HIV prevalence.

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CLONAL DISSEMINATION OF *EMM*12 AND *EMM*1 GROUP A *STREPTOCOCCUS* STRAINS CAUSING SCARLET FEVER DURING 2011-2015 IN SHANGHAI, CHINA

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Since 2011, epidemics of scarlet fever have resurged in several countries, including China, where *emm*12 group A *Streptococcus* (GAS) was responsible for the 2011 large outbreaks. Afterwards, scarlet fever outbreak occurred annually. To date, factors driving the outbreaks have not been well elucidated. Epidemiological data of scarlet fever in Shanghai during 2011-2015 were obtained from the National Notifiable Infectious Disease Surveillance System. Throat swabs of patients with scarlet fever from the Sentinel Hospital, from which 50% of scarlet fever cases in Shanghai were reported, were cultured. GAS carriage surveillance was performed in schools located in three districts. A total of 1,568 GAS isolates were collected for analysis, including 1,451 isolates from patients and 117 from carriers. This continuous study showed that the annual incidence of culture-confirmed scarlet fever was 7.5-19.4/100,000-person-year in Shanghai during 2011-2015, with an average GAS carriage rate being 7.6% in school-aged children. Twelve *emm* types were identified with co-predominance of *emm*12 (61.8%) and *emm*1 (35.9%), which harboured different super-antigen profiles. The proportion of *emm*1 GAS strains increased from 3.8% in 2011 to 48.6% in 2014. Two predominant clones identified by pulsed-field gel electrophoresis, SH001-*emm*12 and SH002-*emm*1, were discovered in 66.9% of scarlet fever cases and 50% of carriers, respectively. The frequencies of resistance to macrolides and tetracycline among GAS isolates were both over 95%, which was mediated by *ermB* and *tetM*, respectively. GAS population is changing, and ongoing surveillance is warranted to monitor the dynamic changes of GAS *emm* type, predominant clone, and superantigen profile.

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DIRECT EVIDENCE OF VIRAL INFECTION AND MITOCHONDRIAL ALTERATIONS IN THE BRAIN OF FETUSES AT HIGH RISK FOR SCHIZOPHRENIA

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Introduction: There is increasing evidences that favor the prenatal beginning of schizophrenia. These evidences point toward intra-uterine environmental factors that act specifically during the second pregnancy trimester producing a direct damage of the brain of the fetus. The current available technology doesn't allow observing what is happening at cellular level since the human brain is not exposed to a direct analysis in that stage of the life in subjects at high risk of developing schizophrenia.

Methods: In 1977, we began a direct electron microscopic research of the brain of fetuses at high risk from schizophrenic mothers in order to finding differences at cellular level in relation to controls.

Results: In these studies we have observed within the nuclei of neurons the presence of complete and incomplete viral particles that reacted in positive form with antibodies to herpes simplex hominis type I [HSV1] virus, and mitochondria alterations.

Conclusion: The importance of these findings can have practical applications in the prevention of the illness keeping in mind its direct relation to the aetiology and physiopathology of schizophrenia. A study of the gametes or the amniotic fluid cells in women at risk of having a schizophrenic offspring is considered. Of being observed the same alterations that those observed previously in the cells of the brain of the studied foetuses, it would intend to these women in risk of having a schizophrenia descendant, previous information of the results, the voluntary medical interruption of the pregnancy or an early anti HSV1 viral treatment as preventive measure of the later development of the illness.

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KNOWLEDGE, ATTITUDE AND PRACTICES OF ACCREDITED SOCIAL HEALTH ACTIVISTS (ASHAS) IN NUTRITIONAL SCREENING AND NUTRITIONAL CARE OF UNDER-FIVE AGE CHILDREN IN URBAN POOR SETTLEMENTS OF DELHI

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Background: India has a high burden of child undernutrition and 45% of childhood deaths can be attributed to malnutrition. The National Health Mission (NHM) envisioned accredited social health activists (ASHA) as health activists in the community who creates awareness on health and its social determinants. Under the Delhi State Health Mission, ASHAs are provided training on child feeding practices and care as per ASHA modules.

Objectives: To assess the knowledge, attitude and practices of ASHAs in nutritional screening and nutrition care of children who are under five years in urban poor settlements of Delhi.

Methodology: A cross-sectional study was conducted among 67 ASHA workers selected from four primary urban health centres of South-east and South district of Delhi. Mixed method approach was used where quantitative data was collected using an interviewer administered questionnaire and qualitative data was collected using an in-depth interview conducted with the medical officer, auxiliary nurse midwife (ANM) and focus group discussion with mothers of under-five children.

Results: The overall attitude of ASHA was good regarding nutritional care and nutritional screening. 65% ASHAs had knowledge of nutritional care and screening while 62% ASHAs practiced nutritional care and screening of under-five children and there was a significant association between total practice and knowledge scores of ASHAs ($p < 0.00$). The qualitative finding suggested that although an adequate amount of training regarding infant and young child feeding and nutritional screening was provided to ASHA worker, certain challenges and motivational factors influenced their practices.

Conclusion: Present study shows that though ASHAs had the right attitude, their overall knowledge and practice level had gaps regarding nutritional care and screening of under-five children. This is a crucial component as ASHAs are grassroots level functionaries who are in close proximity to the community and have an important role in protection, promotion and support to the nutrition of the children within the community

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INVESTIGATION INTO VIRULENCE GENES AND ANTIMICROBIAL SENSITIVITY OF FIELD ISOLATES OF BRUCELLA FROM INDIA

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One of the most serious zoonotic disease for human and animals throughout the world Brucellosis has been listed by WHO as one of the seven neglected zoonoses in the developing countries. The disease has been reported from almost all states in India. Devoid of classical virulence markers, the *Brucella* genome inhabits several putative virulence genes identification of which is important for better understanding of pathogenesis. These genes regulate their intracellular trafficking and survival to establish a chronic infection protected from immune and antibiotic arsenals. Prolonged treatments with combination antibiotics like doxycycline, rifampicin and streptomycin, which are active intracellular besides others, have been recommended to treat cases of human brucellosis. In general, antibiotic resistance in *Brucella* is not observed though sporadic cases of antibiotic resistance have been reported. The present study was undertaken to detect the putative virulence genes and *in vitro* antimicrobial sensitivity pattern of *Brucella* isolates from India. Totally, 45 isolates of *Brucella* spp. (*B. abortus* 16; *B. melitensis* 29) from human and animals from different regions of India namely Himachal Pradesh, Jammu & Kashmir, Punjab, Karnataka, Tamil Nadu, Maharashtra, West Bengal, Assam and Meghalaya were used. Virulence gene profiling for nine genes, viz., VirB5, BtpA, BtpB, VecC, BetB, BPE275, VirB2, BSPB and PrpA by polymerase chain reaction (PCR) and minimum inhibitory concentration (MIC) of seven antibiotics, viz., rifampicin, azithromycin, tetracycline, ciprofloxacin, streptomycin, ofloxacin and co-trimoxazole using the gradient diffusion susceptibility method (HiComb strips, HiMedia) was estimated. Virulence genes like VirB5 (37.77%), BtpA (73.33%), BtpB (68.88%), VecC (55.55%), BetB (82.22%), BPE275 (77.77%), VirB2 (97.77%), BSPB (82.22%) and PrpA (71.11%) could be identified among isolates. All the isolates were found sensitive to azithromycin, tetracycline, ciprofloxacin, streptomycin and ofloxacin. Of these, 10 (*B. abortus* 4; *B. melitensis* 6) isolates exhibited intermediate sensitivity to co-trimoxazole. Resistance to co-trimoxazole was found in 20 of which, 14 were *B. abortus* and 6 were *B. melitensis*. Similarly, 15 isolates were resistant to rifampicin, which include *B. abortus* (10) and *B. melitensis* (5). Significantly, six isolates (*B. abortus* 5; *B. melitensis* 1) were found resistant to both rifampicin and co-trimoxazole. While presence of combination of virulence genes may have influence on the pathogenesis, resistance to antibiotic(s) of choice used to treat human cases needs attention. Implication of these would be discussed.

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MATERNAL GROUP B *STREPTOCOCCUS* RECTO VAGINAL COLONIZATION INCREASES THE ODDS OF STILLBIRTH: EVIDENCE FROM EASTERN ETHIOPIA

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Background: Group B *Streptococcus* (GBS) causes a significant number of stillbirths. Despite this, there is little documented information on the association between stillbirth and pregnant women's GBS recto vaginal colonization in Sub-Saharan Africa. As such, this study was aimed at identifying the association between stillbirth and pregnant women's GBS recto vaginal colonization in Eastern Ethiopia.

Methods: A health facility-based cross sectional study was conducted among 1688 pregnant women who came for delivery services in Harar town, Eastern Ethiopia from Jun' to Oct' in 2016. Data were collected using a pre-tested structured questionnaire and check list for clinical record. Group B *streptococcus* (GBS) positivity of the pregnant women was confirmed by culture of recto vaginal swab using selective media. The association between GBS colonization and stillbirth was examined using multivariable logistic regression analysis. Level of statistical significance was declared at P value <0.05.

Results: Of the 1688 pregnant women who participated in the study, 144 had stillbirths, representing a proportion of 8.53% [(95% CI: 7.19, 9.86]. GBS colonization at birth was detected in 231 (13.68%; 95% CI: 12.04, 15.32). Of these 144 stillbirths, 59 (40.97%) were from colonized mothers, 72 (59.03%) were from non-colonized mothers. Of these 59 stillbirth from colonized mothers, 32 (54.23%) were intrapartum stillbirth, 27 (45.77%) were antepartum stillbirth occur before exposed to intrapartum antibiotic prophylaxis (IAP). After controlling for potential confounders, the odds of having a stillbirth was 9.08 times higher among recto vaginal GBS colonized pregnant women [AOR= 8.93; 95% CI: 5.47, 14.56].

Conclusions: This study demonstrated significant association between maternal recto vaginal GBS colonization and stillbirth. Efforts to reduce stillbirth need to consider prevention of GBS colonization among pregnant women.

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HIGH PREVALENCE OF METALLO- β -LACTAMASE CARBAPENEMASE-PRODUCING *ACINETOBACTER BAUMANNII* IN TRIPOLI, LIBYA: DOMINANCE OF OXA-23 AND NDM-1

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Background: *Acinetobacter baumannii* is an opportunistic pathogen causing various nosocomial infections. The aim of this study was to characterize the molecular support of carbapenem-resistant *A. baumannii* clinical isolates recovered from two Libyan hospitals.

Methods: Bacterial isolates were identified and antibiotic susceptibility test was performed using automated system. Carbapenem resistance determinants were studied phenotypically using three different techniques: metallo- β -lactamase (MBL) E-test; chromogenic culture media and modified Hodge test (MHT). Polymerase chain reaction (PCR) amplification was used to determine the presence of metallo- β -lactamase blaNDM-1, bla_{OXA23}, bla_{OXA48} and bla_{OXA51} genes among isolates.

Results: A total of 108 *A. baumannii* isolates were characterized, overall the resistance prevalence was extremely high for aminoglycosides, fluoroquinolones, cepahosporens and carbapenemes (93.2-100%), all isolates were susceptible to colistin. In addition, 97.5% of isolates were identified as multidrug resistance (MDR). Varying degree of phenotypic detection of carbapenemes was determined; highest levels of carbapenemes were detected using chromogenic media (75.5%) compared with MBL E-test (45.5%) and MHT (71.4%). The carbapenem resistance-encoding genes detected were blaNDM1 (70.6%), bla_{OXA23} (84%), bla_{OXA48} (46.2%) and bla_{OXA51} (73.1%); the highest carbapenem genes were demonstrated in Burn and Plastic Surgery Hospital (73.7%). The co-occurrence of blaNDM1, bla_{OXA23} and bla_{OXA48} genes were demonstrated in (30/119; 25.2%) showing dissemination of carbapenemes resistance MDR *A. baumannii* in hospitals. MLST analysis for *A. baumannii* isolates revealed also the presence of multiple clones in our study. The clones belonging to ST1 and ST2 were the most frequent

Conclusion: This study shows that the high prevalence of NDM-1 and OXA-23 contribute to antibiotic resistance in Libyan hospitals and represents the high incidence of carbapenemases in an autochthonous MDR *A. baumannii* isolated from patients in Libya, indicating that there is a longstanding infection control problem in these hospitals.

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ANALYSIS OF CASES OF HEPATIC ADVERSE REACTIONS WITH ANTITUBERCULOSIS DRUGS IN MOROCCO

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Objective: To analyse the cases of hepatic adverse effects with antituberculosis drugs in Morocco

Methods: We used the Vigiflow national database, Vigilyze and Excel software

Results: Of the 2271 cases of reports of adverse reactions with antituberculosis drugs, there were 886 cases of hepatic adverse reactions, 39% of all anti-tuberculosis adverse reactions. Since 2011, there has been an annual average of 105 cases of hepatic adverse reactions. The most affected age group was between 18 and 44 years old with 50% of all cases, followed by the age group between 45 and 64 years old with 28% of total cases, with a predominance of females (56.7%). The most incriminated antituberculosis drugs in the occurrence of hepatic adverse reactions are the combined forms including ERIP K4 (67%). During the period 2011-2017 and on all cases of hepatic adverse reactions, there were 397 serious cases which represent 45% of total hepatic adverse reactions with an annual average of 44 serious cases. Taking into account the severity criteria, and among the 397 cases of severe hepatic adverse reactions, 341 cases required hospitalization or prolongation of hospitalization which represents 85% of cases; life-threatening was involved in 28 cases and there were 23 deaths.

Conclusion: Hepatotoxicity due to antituberculosis drugs is very common in Morocco. Among the reported cases of hepatobiliary adverse reactions, the proportion of cases considered serious is significant; the most incriminated antituberculosis drugs are especially those used in combination including ERIP K4; in some Asian and African countries, including Morocco, hepatic disease with antituberculosis constitutes a signal of pharmacovigilance that deserves to be evaluated in order to implement the necessary risk minimization actions.

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SEROEPIDEMIOLOGICAL STUDY OF *BLUETONGUE* VIRUS IN THE POPULATION OF IRAN DOMESTIC RUMINANTS

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Bluetongue is one of the infectious diseases of ruminants which transmit by insects. It causes heavy economic losses to countries and is very important in terms of livestock business and livestock products. Due to the World Organization for Animal Health (OIE) notifications, the range of the disease was limited to 35° South and 40° North, but then due to climatic changes the carrier's activity increased and the disease spread to other areas including Europe. The disease in Iran has been reported clinically from many years ago, however, due to the nature of the disease in the country, its real face and its heavy economic losses are still unknown. In the present study, the prevalence of the virus in the country which is based on completely randomized sampling method determined regarding type of livestock and age and sex of the animals. The results of this study revealed that 92.95% of the epidemiological units of the country have different levels of antibodies (mostly high grade) against the virus. The prevalence of antibody by type of animals is as follows: cattle 24.5%, sheep 55.7% and goat 64.3%, which their difference was statistically significant. According the role of environmental factors affecting the propagation and survival of the virus carrier, as well as the effects of livestock displacement on the epidemiology of the virus, efforts were made to analyse the antibody quantity using specific statistical methods in the epidemiological units studied to determine high-risk units with regard to contacting the virus in the geography of the country. The results of this study indicate the high prevalence of the virus in the population of the livestock of the country and the existence of a large geographic area (near the west of the country) with high risk due to suitable conditions for the propagation and survival of the virus carriers and the presence of focal lines with the risk of entry and survival of the infection through unnecessary livestock movements. It is recommended to implement more research on the status of the disease especially isolation of the virus and doing comparison with common strains in the region and other parts of the world for better understanding the situation of the disease and its carriers.

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