The 24th Conference of the Egyptian Society for Medical Microbiology (ESMM)
In Association with Microbiology Department, Faculty of Medicine, Cairo University

NOSOCOMIAL INFECTIONS; THE CHALLENGE OF EMERGING AND REEMERGING INFECTIONS

31st March 2018 Hilton - Dreamland

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The 24th Conference of the Egyptian Society for Medical Microbiology (ESMM)

Nosocomial Infections; the Challenge of Emerging and Reemerging Infections

31st March 2018, Hilton - Dreamland

Program
Announcement

We have the pleasure to announce that the EJMM had been published on the Google scholar link.

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Welcome Message

Dear Colleagues

On behalf of the Egyptian Society for Medical Microbiology (ESMM), we have the pleasure to welcome you to share the activities of the 24th Annual ESMM Conference.

The conference theme "Nosocomial Infections; the Challenge of Emerging and Reemerging Infections" was selected to express the real need for updating our knowledge, understanding and following up the enormous development and the latest recent advances in treatment of some vital problems we are facing in our microbiology practice, namely the antimicrobial resistance.

Also we have the pleasure to meet several eminent guest speakers who will focus on recent advances in infection control, and the problem of drug resistance.

Many of the eminent scientists, both the leading generation and the young promising researchers, are meeting to communicate and exchange ideas and thoughts that will surely find the proper approaches for solving medical problems and to celebrate our traditional annual meeting of almost all microbiologists and immunologists in our beloved Egypt.

The scientific program covers about 35 topics including plenary lectures and research oral presentations delivered by distinguished professors, in addition to poster presentations.

We are looking forward to meeting you in the conference participating in its activities to make it a successful and fruitful one.

President of ESSM
Prof. Samira Shoeb

President of the Conference
Prof. A. Ashraf Wegdan
Prof. Nadia Hafez
Program Overview
Saturday, 31st March 2018

8:00-9:30 Registration
9:30-10:00 Opening Ceremony

Plenary Session 10:00-11:20

Chairmen:
- Prof. Inas Abd El Megeid
- Prof. Nadia Hafez
- Prof. Saeed Al-Abbady
- Prof. Somaia Abd El-Latif

10:00-10:20 Prof. Ashraf Wegdan
“Care Bundles” What are they & why we use them?

10:20-10:40 Prof. Wafaa Kamel Mowafy
Virotherapy in Breast Cancer

10:40-11:00 Prof. Waleed Eldars
The Leaves Have Fallen in a Hot Summer Day; Pyroptosis?!

11:00-11:20 Prof. Ensaf Al Azzazy
Rules and regulations of scientific research submission to the scientific promotion committee of Microbiology

11:20-12:00
- Honouring of Pioneers in Medical Microbiology
- Coffee Break and Exhibition
### Session I 12:00-02:00

**Chairmen:**
- Prof. Azza Al-Sharkawy
- Prof. Ismail Sedeik
- Prof. Khaled Hasanein
- Prof. Mona Ghareib

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<td>12:00-12:15</td>
<td>Shaimaa Hamdy, Ahmed M. Osman, Zainab A Zakaria, Iman Galal, Maha Sobhy, Mohamed Hashem, Walaa R. Allam, Mohamed Abdel-Samiee, Eman Rewisha, Imam Waked and Sayed Abdelwahab</td>
<td>Association of Toll-Like Receptor 3 and Toll-Like Receptor 9 Single Nucleotide Polymorphisms with Hepatitis C Virus Persistence among Egyptians</td>
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<td>Gouda NS, Sultan AM, Eldegla H, Seliem WA</td>
<td>Bacterial Contamination of White Coats and Hands of Healthcare Workers at Mansoura University Children’s Hospital, Mansoura-Egypt</td>
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<td>12:30-12:15</td>
<td>Sara El Sayed M. El Naggar, Mohammed M. EL Naggar, Heba El Sayed EL Degla</td>
<td>Endotracheal tube biofilm and its relation to ventilator associated pneumonia in neonatal intensive care unit</td>
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<td>12:30-12:45</td>
<td>Elshaymaa Abdel-sattar Mohamed, Sherine Ahmad Aly, Nahla Mohamed El-Sherbiny, Shabaan Hashem Ahmed2, and Osama Mahmoud El-Asheer</td>
<td>Serotype distribution of <em>Streptococcus pneumoniae</em> causing Community-Acquired Pneumonia in children in the pre-PCV era (Egypt)</td>
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<td>12:45-01:00</td>
<td>A. Aboul Ela, A. Gaballah, E. El-Sherbini, H. Abd El-Raouf, E. El-Ghazzawi</td>
<td>Molecular Strain Typing of Multidrug Resistant <em>Klebsiella pneumoniae</em>: Capsular wzi-Gene Sequencing versus Multiple Locus Variable Number Tandem Repeat Analysis</td>
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<td>01:00-01:15</td>
<td>Comparison between Phenotypic and Genotypic Methods for Detection of Crabapenemases Producing Acinetobacter Isolates in ICUs in Assiut University Hospitals</td>
<td>Ismail S. Mohammed, Shereen A. Abd El-Rahman, Noha A. Afifi, Nahla M. Elsherbiny and Michael N. Agban</td>
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<td>01:15-01:30</td>
<td>Surveillance of Surgical Site Infection in General Surgery Department at Sohag University Hospital</td>
<td>Mamdouh M. Esmat, Asmaa M. Goda, Hala Abdelal A. Abdallah, Alaa A. Redwan</td>
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<td>01:45-02:00</td>
<td>Molecular Study of Parvovirus B19 infection in Children with Acute Myeloid Leukemia</td>
<td>Noha Tharwat Abou El-Khier, Ahmad Darwish, Maysaa El Sayed Zaki</td>
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**02:00-04:15**

**Chairmen:**
- Prof. Abdel Raheem Ads
- Prof. Ahmed Omar Shafeik
- Prof. Mona Abd El-Wahab
- Prof. Somaia Al-Desouky

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<td>Hesham El-Sayed, Sohair Mehanna, Nermine El Maraghy, Soha Younes, Adel Hassan, Mahmoud Sheded, Zeinab Khedr</td>
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<td>GATA3 rs3824662 Gene Polymorphism as Possible Risk Factor in a Cohort of Egyptian Patients with Pediatric acute Lymphoblastic Leukemia and its Prognostic impact</td>
<td>Youssef M. Mosaad, Rasha Elashery, Ahmad Darwish, Omar A. Sharaf Eldein, Tarek Barakat, Samy Marouf, Noha T. Abou El-Khier, Laila F. Youssef and Iman M. Fawzy</td>
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<td>Impact of Healthcare workers training on Safe Injection Practices at Fayoum University Hospitals</td>
<td>Sylvana N Gaber, Ahmed A. Wegdan, Rasha H. Ahmed Bassyouni</td>
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<td>Bacterial Infections and Biofilm Formation Associated with Intra Uterine Contraceptive Device</td>
<td>Aml El-sayed Abdou, Eman Abd El Azeem Mohamad, Amany Mohamad Tawfiek, Reda El-belbasy</td>
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<td>Association of intercellular adhesion gene A with biofilm formation in staphylococci isolates from patients with conjunctivitis</td>
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<td>Essraa A. Hegazy, Somaia A. Eissa, Ashraf E. Sorour, Fouad H, Dalia Omran</td>
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| **2.** Yahya Jirjees Salman, Shihab Ahmad Mohammad, Ola Salih Ali.  
Relationship between Fecal Calprotectin and *Entamoeba histolytica* among Patients with Gastroenteritis in Kirkuk city-Iraq |
| **3.** Ismael S. Mohamad, Sherein G. Elgendy, Wegdan Abdel Hameed, Amany I. Ali  
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Detection of *Helicobacter Pylori* in Egyptian Patients with Calcular Obstructive Jaundice |
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| **7.** Abulfetouh Alenany, Wageih S. El-Naghy  
Diagnosis of *Helicobacter pylori* Infection in Children with Dyspepsia and Bad Breath Using Saliva Samples and a Modified Commercial Kit |
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Plenary Session
“Care Bundles” What are they & why we use them?

Ashraf Wegdan
Prof. of Microbiology, Faculty of Medicine, Fayoum University

It is the duty of Healthcare Workers to provide a high level of care to all patients. They should consider all available standards in different infection control guidelines. What are “Care Bundles”? A Care Bundle is a collection of interventions (usually 3-5) that are evidenced based. All clinical staff know that these interventions are best practice but frequently their application in routine care is inconsistent. A Care Bundle is a means to ensure that the application of all the interventions is consistent for all patients at all times thereby improving outcomes. Dr. Peter Pronovost (Intensivist in a hospital in Michigan) is accredited with developing the 1st Care Bundle – insertion and management of CVC’s. He developed a checklist for insertion and management of CVC’s to ensure that key interventions recommended by the CDC 2002 guidelines were implemented every time a CVC was inserted.

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Virotherapy in Breast Cancer

Wafaa Kamel Mowafy
Professor of Medical Microbiology and Immunology, Mansoura Faculty of Medicine

Breast cancer (BC) is the most common type of cancer among women and is the second most common cause of cancer-related deaths, following lung cancer. Severe toxicity associated with a long-term use of BC chemo- and radiotherapy makes it essential to look for newer therapeutics. Oncolytic viruses (OVs) have emerged as one of the most promising treatment options for BC. Oncolytic virus is a ‘biological weapon’ that acts against cancer cells. It has the ability to infect the cancerous tumor and lyse (kill) the cancer cell while preserving normal cells. In addition to causing direct lysis of cells, OVs can also be used as delivery vectors for therapeutic genes. There are a number of viruses which are either naturally tumor-selective or can be modified to specifically target and eliminate tumor cells. Many preclinical and clinical studies have shown that OVs are effective in treating BC, both as a single therapeutic agent and as a part of combination therapies.
The Leaves Have Fallen in a Hot Summer Day; Pyroptosis?!

Waleed Eldars
Medical Microbiology and Immunology Department,
Faculty of Medicine, Mansoura University.

Pyroptosis is a form of inflammatory programmed cell death pathway activated by human and mouse caspase-1, human caspase-4 and caspase-5, or mouse caspase-11. Pyroptosis requires cleavage and activation of the pore-forming effector protein gasdermin D by inflammatory caspases. Physical rupture of the cell causes release of the pro-inflammatory cytokines IL-1β and IL-18. This form of cell death is used by the host to control bacterial, viral, fungal, or protozoan pathogens. However, it have been linked to the development of some metabolic and autoimmune diseases.
Roles and Regulations of Scientific Research Submission to the Scientific Promotion Committee of Microbiology

Prof. Ensaf Al Azzazy
Session I
Toll-like receptors (TLRs) give the innate immune system a considerable specificity for a large range of pathogens. TLR3 detects dsRNA of viruses while TLR9 recognizes bacterial and viral unmethylated CpG motifs. This study examined whether there is a potential association between single nucleotide polymorphisms (SNPs) in the TLR3.rs3775290 (c.1377C/T), TLR9.rs5743836 (-1237T→C) and TLR9.rs352140 (G2848A) genes and HCV infection among Egyptian patients and healthcare workers (HCWs). We enrolled 404 HCWs and 142 patients in four groups: group 1 included 265 seronegative, aviremic subjects; group 2 included 25 seronegative, viremic subjects; group 3 included 87 subjects with spontaneously resolved HCV infection; and group 4 included 169 chronic HCV patients. All subjects were genotyped for TLR3.rs3775290, TLR9.rs5743836 and TLR9.rs352140 SNPs by polymerase chain reaction restriction fragment length polymorphism (PCR-RFLP) analysis. TLR3.rs3775290 "CC" genotype was associated with chronic HCV-infection where there was a greater frequency of this genotype among chronic patients (63.9%) when compared to spontaneously resolved subjects (51.9%; p=0.033). There was no significant difference in TLR9.rs5743836 and TLR9.rs352140 genotype distribution between groups (p>0.05). Lack of association between the three SNPs was found as the three SNPs are located on two different chromosomes. In conclusion, TLR3.rs3775290 "CC" genotype was associated with chronicity of HCV infection while the TLR9 gene may not play a major role in HCV infection.
(2) Bacterial Contamination of White Coats and Hands of Healthcare Workers at Mansoura University Children’s Hospital, Mansoura-Egypt

Gouda N.S.1,3, Sultan A.M.1,3; Eldegla H.1,3, Seliem W.A.2,3
1Medical Microbiology and Immunology Department, 2Pediatric Department, 3Mansoura University - Faculty of Medicine, Mansoura University, Egypt

Background: Transmission of hospital acquired infections (HAIs) may be associated with contamination of healthcare workers’ (HCWs) hands and white coats. Objective: The purpose of this study was to clarify the role of HCWs’ white coats in transmitting HAIs and to determine the association between bacterial contamination of HCWs’ hands and white coats. Methodology: A total of 154 HCWs were enrolled in the study; different samples were taken from their hands and white coats. Samples were processed and both microbiological and biochemical characterization of the isolates were done using standard microbiological protocols. Results: Up to 65.6% of hands and 61% of coats of HCWs were contaminated by microorganisms. Staphylococcus aureus was the most commonly isolated organisms from both hands and coats of HCWs (29.2%, 27.3% respectively) followed by MRSA (22.1%, 24.7% respectively). Conclusions: The risk for contamination of hands and coats of HCWs is high in different clinical settings. In order to reduce the rate of HAIs, a strict dress protocol should be set into play to prevent cross contamination between HCWs and patients.

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(3) Endotracheal Tube Biofilm and its Relation to Ventilator Associated Pneumonia in Neonatal Intensive Care Unit

Sara El Sayed M. El Naggar\textsuperscript{1}, Mohammed M. EL Naggar\textsuperscript{2,3}, 
Heba El Sayed EL Degla\textsuperscript{2,3}

\textsuperscript{1} Microbiology Department, Aga Central Hospital; \textsuperscript{2} Medical Microbiology and Immunology Department, Faculty of Medicine, Mansoura University; \textsuperscript{3}Microbiology Diagnostics and Infection Control Unit (MDICU), Faculty of Medicine, Mansoura University

**Background:** Healthcare associated infections are the main causes of morbidity and mortality in critically ill neonates. Lungs are extremely susceptible to infection if patients receive mechanical ventilation (MV) resulting in ventilator associated pneumonia (VAP). **Objectives:** This study aimed at detection of biofilm formation on the inner surface of ETTs of neonates on MV by SEM and also to study the relation between biofilm formation and the development of VAP in mechanically ventilated neonates. **Methodology:** A total of 50 endotracheal tubes (ETT) and 50 endotracheal aspirate (ETA) samples were collected from 50 mechanically ventilated neonates with gestational age between 26 to 37 weeks in NICU of MUCH over a period of 12 months from January to December 2015. Samples were processed in MDICU as per standard microbiologic procedures. Detection of biofilm on the inner surface of ETTs was done by scanning electron microscope and grading of biofilm was done using a 1–3 integer scale. **Results:** In this study, 82% of the neonates fulfilled the criteria of VAP. A total of 45 isolates were recovered. The commonest organisms isolated from ETA were \textit{klebsiella spp.} (48.8%), followed by \textit{Pseudomonas spp.} (24.4%). No fungal isolates were reported. While colonization of the inner ETT surface was detected in 80% of the collected tubes. The commonest organisms isolated from ETTs were \textit{klebsiella spp.} (42.5%), followed by \textit{Pseudomonas spp.} (22.5%). Bacteria implicated in formation of biofilm showed multi-resistance towards most antibiotics and methicillin resistance was detected in 66.6% of isolates. Biofilm formation was observed by SEM in 80% of the collected tubes. Different stages were observed; (47.5%) stage III, (31.25%) stage II, and (17.5%) stage I. there was statistically highly significant association between ETT colonization and VAP development. The long duration of intubation (5 to 9 days) was associated with increase in ETT colonization and advanced biofilm stage (stage III). **Conclusion:** ETT colonization and biofilm formation were frequently observed in neonates undergoing MV; the grade of ETT biofilm increased with increased duration of intubation and is correlated with occurrence of VAP. Multi resistance towards most antibiotics was observed for bacteria implicated in ETT colonization and biofilm formation. This highlight the importance of discovering new strategies to prevent or reduce biofilm formation.

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(4) Serotype Distribution of *Streptococcus pneumoniae* Causing Community-Acquired Pneumonia in Children in the pre-PCV Era (Egypt)

Elshaymaa Abdel-sattar Mohamed¹, Sherine Ahmad Aly², Nahla Mohamed El-Sherbiny², Shabaan Hashem Ahmed², and Osama Mahmoud El-Asheer³

¹Seed Pharmaceutical Factory, Assiut University; ²Department of Medical Microbiology & Immunology, Faculty of Medicine, Assiut University; ³Department of Pediatrics, Faculty of Medicine, Assiut University

*Streptococcus pneumoniae* is a grave pathogenic microorganism which is struggled over decades by various vaccines. Therefore, continues monitoring of circulating strains to assess vaccine efficacy and replace serotypes is being utmost necessity. Conventional serological methods are costly, time consuming, subjectivity in interpretation, and need high technical skills. Also, multiplex methods have limited serotype coverage and requires multiple PCR primers. This study was conducted to determine the serotype distribution of *S. pneumoniae* isolated from one hundred mechanically ventilated children with severe community-acquired pneumonia in ICU of Assiut University Paediatric Hospital. Precise discrimination of thirty six *Streptococcus pneumoniae* from closely related streptococci was developed by various phenotypic and genotypic tests. A single PCR reaction for amplifying (16S rRNA) gene (217 bp) and regulatory capsular polysaccharide (cpsB) gene (1,061 bp) amplicons have 100% sensitivity and specificity. Sequencing for the amplicons of (16S rRNA) gene and (cpsB) gene of different serotypes of *S. pneumoniae* were done. We found that 75% and 60% of the isolated serotypes are included in PPV23 and PCV13, respectively. A 25% of the serotypes are non–vaccine serotypes, while 10% of them are non-typeable serotypes or new strains.

s-aly71@windowslive.com
Molecular Strain Typing of Multidrug Resistant *Klebsiella pneumoniae*: Capsular *wzi*-Gene Sequencing versus Multiple Locus Variable Number Tandem Repeat Analysis

A. Aboul Ela¹, A. Gaballah², E. El-Sherbini³, H. Abd El-Raouf⁴, E. El-Ghazzawi ⁵

¹,²,³,⁵Department of Microbiology, Medical Research Institute, Alexandria University, ⁴Department of Medical Microbiology and Immunology, Faculty of Medicine, Alexandria University

**Background:** Multidrug resistant (MDR) *Klebsiella pneumoniae* commonly causes health care associated infections worldwide. Bacterial strain typing can assist epidemiological investigations and help in tracing cross-transmission of pathogens within healthcare facilities. Owing to the limitations of the traditional typing methods, they have been lately replaced by the molecular typing methods. **Methodology:** In this study, we compared 2 molecular typing methods; multiple locus variable number tandem repeat analysis (MLVA), and capsular typing by *wzi* gene sequencing for genotyping of MDR *K. pneumoniae* isolates. Fifty MDR and 10 non-MDR *K. pneumoniae* subsp. *pneumoniae* isolates, collected from two Alexandria University hospitals, were the material of this study. Biochemical identification of the isolates was confirmed by PCR amplification of the 16S-23S ITS region. **Results:** Out of the 23 *K. pneumoniae* subsp. *pneumoniae* isolates were randomly selected for *wzi* gene sequencing, 19 showed sequence identity to previously published *wzi* sequences, while 4 had unique sequences. Genotyping of the isolates by the two methods showed 100% typeability. Subsequent cluster analysis revealed the relatedness of MDR isolates from one of the hospitals (8/15), which suggests probable cross transmission between patients. No relatedness was detected between the MDR and the non-MDR isolates. The 2 methods were successful in genotyping of 82.6% of the isolates in a similar way; hence the genotyping results by both methods were largely comparable. Typing by MLVA, however, was more discriminatory (97%) than by *wzi* gene sequencing (92%). **Conclusion:** MLVA may be considered a cheaper and more discriminatory molecular typing method suitable for typing of *K. pneumoniae* isolates in developing countries.

aliaagamaleldin@gmail.com
Comparison between Phenotypic and Genotypic Methods for Detection of Crabapenemases Producing Acinetobacter Isolates in ICUs in Assiut University Hospitals

Ismail S. Mohammed¹, Shereen A. Abd El-Rahman², Noha A. Afifi¹, Nahla M. Elsherbiny and Michael N.Agban¹

¹Department of Microbiology and Immunology, Faculty of Medicine, Assiut University, Assiut, Egypt; ²Chemical Industries Devolpment (CID) Pharmaceutical company, Assiut, Egypt

Background: The genus Acinetobacter is one of the major threats in clinical nosocomial infections in different hospitals worldwide particularly in ICUs. The *Acinetobacter calcoaceticus-baumannii*(Acb) complex is the most prevalent species.

Objectives: This study aim to determine the prevalence of carbapenem resistant Acinetobacter (CRA) spp. infections in ICUs in Assiut University Hospitals, evaluate the different phenotypic tests for detection of carbapenemases producing Acinetobacter isolates in comparing to conventional PCR, determine the distribution of OXA carbapenemases and metallo-beta lactamases genes in Acinetobacter isolates and determine the antimicrobial susceptibility profile of Acinetobacter strains.

Methodology: This study included 1204 clinical samples isolated from 928 hospitalized patients and 625 environmental samples from January 2013 to January 2016. Isolates were identified by conventional methods and confirmed by PCR and Vitek 2 system. The antimicrobial susceptibility profile detected by the disc diffusion method. Carbapenemases production was detected phenotypically by Imipenem, Meropenem and Doripenem E-test, modified Hodge test(MHT), combined disc test(CD) and double disc synergy test(DDST) using imipenem(IPM) and meropenem(MEM) (10 µg) discs. Finally, OXA carbapenemases bla genes (blaOXAn, like, blaOXAn-23-like, blaOXAn-24-like, blaOXAn-58-like) and MβL bla genes (blaSIM, blavIM and blaIMP) were investigated in Acinetobacter isolates genotypically by PCR.

Results: A total of 60 Acinetobacter strains were isolated including 55(4.6%) clinical samples and 5(0.8%) environmental samples. Out of 55 clinical samples, 51(90.7%) were *A.baumannii* (harboring intrinsic blaOXAn-51) and 4(7.27%) were Acinetobacter complex. Isolates exhibited high resistance rate to the majority of commercially available drugs including imipenem (88%) and meropenem (91.67%). Fifty (83.3%) isolates were extensively-drug resistant (XDR). Comparing the phenotypic tests to the gold standard PCR, MHT using IPM had the higher specificity in detection of carbapenemase activity while DDST using MEM had the higher specificity in detection of MβL activity. The prevalences of bla genes detected in isolates by PCR were blaOXAn-51 in 93.3%, blaOXAn-23 in 68.3%, blaOXAn-24 in 23.3%, blaOXAn-58 in 10%, blavIM in 46.7%, blavIM in 8.3% and blaIMP was not detected.

Conclusions: XDR Acinetobacter spp. are increasing rapidly in Egypt. DDST is more convenient and specific than CD test in MβL screening and MEM is recommended to be used. The coexistence of ≥ 2 of class D OXA genes is greatly associated with CRA infections.

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Surveillance of Surgical Site Infection in General Surgery Department at Sohag University Hospital

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Background: Surgical site infections (SSI) are the most common nosocomial infections in surgical patients and lead to prolonged hospital stay, readmission to the hospital, and increased morbidity and mortality. Objectives: This study aimed to detect the incidence of SSI and the risk factors, the causative organisms and their antimicrobial susceptibility pattern in general surgery department at Sohag university hospital. Methodology: A prospective SSI surveillance at Sohag University hospital from (January 2017 to June 2017) using the criteria of the Centers for Disease Control. Basic demographic, surgical data and data of possible risk factors were collected from all patients. Patients were followed up for 30 days after surgery. Swabs were collected from cases with signs and symptoms of SSI and cultured on basic microbiological culture media. Isolated colonies were identified microscopically and biochemically. Full identification of the causative organisms and their antibiotic sensitivity were done by Vitek 2 compact automated system. Results: The study included 482 patients and the incidence of SSI infections was (11.2%). Escherichia coli was the most common organism causing SSI and was responsible for (40%) of SSIs followed by Pseudomonas aeruginosa (20%), Staphylococcus aureus (20%), Enterobacter cloacae (10%) and Klebsiella pneumoniae (10%). Most of isolated E. coli and Klebsiella were ESBL producers (73.3%). Pseudomonas aeruginosa shows emergence of resistance to tigecycline (25%). All isolated staph. aureus were (MRSA) and (10%) of them were (VRSA). Univariate regression analysis show that older age, urgent operation type, bad patient general condition, contaminated wound type, hypertension, obesity, intake of antibiotic prophylaxis and increased length of hospital stay (days) were risk factors for SSI. The multivariable regression analysis revealed that urgent operations type, bad patient condition, obesity increasing length of hospital stay (days) and intake of antibiotic prophylaxis independent risk factors for the development of a SSI. Conclusion: The study provides a valuable data about SSI in General Surgery Department and highlights risk factors associated with SSI, the causative pathogens and their antibiotic sensitivity in our hospital that can help in updating the antimicrobial prophylaxis policy and reducing the incidence of SSI.

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(8) Role of RAPD typing of Candida isolates from NICU and PICU in Tracing Source of Infection

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Background: Rates of Candida infection have increased significantly with special concern in PICUs and NICUs. Having information on causative species, and clonal relationship among Candida strains that cause significant mortality in children and neonates is a considerable advantage when attempting to treat and control these infections. Objective: This work was done in attempt to investigate the distribution of various Candida species among samples from patients, personnel and environment in the neonatal and pediatric intensive care units of Mansoura University Children's Hospital and its clonal relationship. Methods: The study included 550 samples obtained from the 3 ICUs in Mansoura university children's hospital. Samples were classified into 3 groups: 320 patient samples, 95 health care personnel samples and 135 environmental samples. Species distribution was investigated. RAPD typing was done for all isolates to study clonal relationship. Results: Candida isolation rate was 19.4% among patient group and 17.9% among personnel group, while environmental samples didn't yield any Candida isolates. In patient group, C. albicans was the most commonly isolated species (43.5%). In the NICU, C. parapsilosis was the most commonly isolated species (40%). In personnel samples C. parapsilosis was the commonest. Genotyping was performed to strains isolated simultaneously from patients and personnel. In PICU, 25 C. albicans yielded 17 genotypes; (A) in 3 patients and one personnel, (B) from 2 patients and one of the personnel. (D, E, F) were identical pairs, the remaining genotypes were distinct. The 9 C. parapsilosis isolates yielded 2 genotypes; (i) in 4 patients and one personnel, and (ii) in 3 patients and one of personnel. The 16 C. tropicalis yielded 3 genotypes; (I) for 5 patients and 2 personnel, (II) for 4 patients and 1 personnel and the remaining 4 patients isolates belonged to genotype (III). PAPD typing of the 4 C. albicans isolated from the NICU yielded 4 distinct genotypes. For the 8 C. parapsilosis isolates RAPD revealed 2 genotypes; (i) in 4 patients and 3 personnel and (ii) for a personnel isolate e.In SICU only C. albicans was isolated from both patients and personnel, and RAPD typing of the 4 isolates revealed 3 genotypes; (A) in one patient and one personnel, (B) in one patient and genotype (C) in one personnel. Conclusion: PAPD typing is important for detecting relatedness between isolates in order to trace the source of infection and prevent the mode of transmission. It is important to underscore that, beyond prophylaxis with antifungal agents, standard measures to prevent nosocomial infections should always be applied both for their efficacy and for their low cost. Because transmission of Candida could occur via the hands of health care workers, especially during the care of catheters, all hospitals need to improve their adherence to hand hygiene.

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(9) Molecular Study of Parvovirus B19 infection in Children with Acute Myeloid Leukemia

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Background: Parvovirus B19 is a common viral infection in children. Nearby evidences are present about its association with acute leukemia, especially acute lymphoblast leukemia in children. Nevertheless, scanty reports discuss its role in acute myeloid leukemia (AML). Objectives: to evaluate the frequency of virological markers of B19 infection including its DNA detection by polymerase chain reaction (PCR) along with detection of specific immunoglobulins G (IgG) and M (IgM) among children with newly diagnosed AML and during induction chemotherapy. Besides, the study aims to describe the clinical importance of Parvovirus B19 infection in those patients. Methodology: A case-control retrospective study was conducted on Children recently diagnosed to have AML before chemotherapy induction and children with acute myeloid leukemia under induction chemotherapy during the same duration. Parvovirus B19 study was performed by determination of specific IgM and IgG by enzyme linked immunosorbant assay (ELISA) and DNA detection in serum by PCR. Results: Parvovirus DNA was detected in 20 patients with AML. IgM was found in sera of four patients and one case had positive DNA and IgG (5%). Patients with recent parvovirus B19 infection had a significantly reduced hemoglobin level, RBCs counts, platelet counts, neutrophil counts and absolute lymphocytosis (p=0.01, p=0.0001, p=0.01, p=0.02, p=0.0003 respectively). There were no clinical findings with statistically significant association with recent infection. Half of the patients with AML had positive PCR and/or IgM for parvovirus B19. Among children with AML under chemotherapy, there were reduced hemoglobin levels (P=0.03), reduced platelet counts (P=0.0001) and absolute neutropenia (mean±SD, 1.200±1.00) in patients with parvovirus B19 infection. More than half of patients with parvovirus B19 (72.2%) had positive PCR and/or IgM and 36.4% of them had positive IgG. Conclusion: Our study highlights that parvovirus B19 is common in children with AML either at start of diagnosis or under chemotherapy. There are no clinical manifestations that can be used as marker for its presence, while hematological laboratory findings can give an evidence for such infection by presence of anemia and neutropenia. Detection of parvovirus B19 by combined molecular and serological markers is required in those patients for accurate diagnosis.
Session II
(1) Assessment of Doctor’s Knowledge with Infection Control Guidelines in Health Care Facilities

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Background: Hepatitis C virus is a blood borne infection and one of the major global problems. In Egypt, the prevalence is reported to be the highest. Study objectives: The study aims to assess the knowledge, attitude and practice of doctors regarding infection control guidelines. Methodology: a cross sectional study was conducted on physicians concerning the control measures related to their years of experiences. Results: knowledge about infection control policies it was relatively low among all physicians. Conclusion & Recommendations: The high level of exposure of doctors to blood and body fluids and needle stick injury highlights the need for improvement in health safety to prevent transmission of infections.

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(2) GATA3 rs3824662 Gene Polymorphism as Possible Risk Factor in a Cohort of Egyptian Patients with Pediatric acute Lymphoblastic Leukemia and its Prognostic impact

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Objectives: To investigate the possible role of GATA3 rs3824662 polymorphism as risk factor for the development of acute lymphoblastic leukemia (ALL) in a cohort of Egyptian children and to evaluate its prognostic role. Methodology: Typing of GATA3 rs3824662 polymorphism was done using real-time PCR for 116 patients with ALL and 273 healthy controls. Results: The A allele and AA genotype were significantly higher in ALL patients (p=.015 and .016, respectively) especially B-ALL (p=.014 and .01, respectively). The AA genotype was associated with shorter disease free survival (DFS) in univariate (p=.017) and multivariate cox regression analysis (p=.028), increased incidence of relapse (p=.008) and poor prognosis (p=.028) in pediatric ALL. The GATA3 rs3824662 A allele and AA genotype may be risk factors for the development of pediatric ALL especially B-ALL in the studied cohort of Egyptian patients. Conclusion: The AA genotype is associated with shorter DSF, increased incidence of relapse and poor prognosis in pediatric ALL.

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(3) Impact of Healthcare workers training on Safe Injection Practices at Fayoum University Hospitals

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Background: Ensuring safe injection practice is one of the greatest challenges for healthcare system in developing countries. Objectives; to assess the injection safety practices and safe disposal of waste by evaluating knowledge and practices of Health Care Workers (HCWs) towards injection safety at Fayoum University Hospitals, before and after training program, and to determine the incidence of needle stick injuries (NSI) among HCWs.

Methodology: A cross-sectional study was conducted at Fayoum University Hospitals from October 2016 to June 2017. Two hundreds HCWs working in eighteen departments were included. Questionnaire was used to collect information about knowledge, and 395 injection opportunities were observed using a standardized observation check list to detect practices of HCWs towards injection safety before and after training courses.

Results: Significant change in knowledge of HCWs was detected pre and post training intervention (p <0.05). Regarding the practices, significant improvement (p<0.05) was observed: recap needles were reduced from 21% to 13.2%. The incidence rate of NSI was 27/200 (13.5%). The best knowledge and practices mean percentage was obtained from neonatology staff (p< 0.001), and the poor knowledge (p< 0.04) and practices (p< 0.02) mean percentage were from internal medicine staff either pre or post training. Conclusion: Interventions with educational training courses are found to be effective in improvement of safety injection practices and so the NSI prevention among HCWs.

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Background: Intrauterine device (IUD) is a convenient, effective and one of a long term contraceptive procedures. However, it may act as a reservoir of reproductive tract infections. Objectives: to monitor the microorganisms in the cervix and on the removed IUD after different times in situ and examine their association with microbial biofilm formation on removed intrauterine devices, and also to detect some common sexually transmitted bacteria. Methodology: a total of 40 women selected randomly from the Gynecological outpatient clinic of Al-Glaa Teaching Hospital in Cairo were included. Cervical swabs and the removed IUD were bacteriologically examined and IUD were analyzed by electron microscope to identify the presence of a microbial biofilm. Real time polymerase chain reaction (PCR) was performed to detect some common sexually transmitted organisms. Results: The mean age of the studied women was 32.12±6.7 years and the mean duration of IUD in situ was 2.55±0.87. Mixed organisms (E. coli, Enterococcus faecalis, Candida spp. and Staph aureus) were detected with no significant differences in the frequency between the isolated organisms from cervical swab (116) and that from removed IUDs (134) and also in the duration of IUD in situ. Neisseria. gonorrhoeae, Mycoplasma and Chlamydiae trachomatis were also detected with no significant differences in the frequency between them (p> 0.05). Thick biofilm of multiple microorganisms was detected on the surfaces of removed IUDS. Conclusion: The insignificant association between microorganisms that were isolated from the cervix, removed IUDs and biofilms may indicate the pre-existence of those organisms before or spread by IUD insertion and IUD may act as a reservoir for resistant organisms. Additionally, the presence of some asymptomatic sexually transmitted infections, may point to that those women may act as STO transmitters. Appropriate management of reproductive tract infections prior to and throughout IUD use is vital.

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(5) Association of Intercellular Adhesion Gene A with Biofilm Formation in *Staphylococci* isolates from Patients with conjunctivitis

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**Background:** There is a great negative impact of biofilm-mediated infection on patient health which necessitates the use of reliable methods for detecting biofilm producers. **Aims:** This study was done to determine biofilm-producing ability and the presence of intercellular adhesion gene A in clinical staphylococcal isolates and to assess the reliability of two phenotypic methods used for biofilm detection. **Methodology:** Fifty staphylococcal strains were isolated from 100 conjunctival swabs from patients attended the Ophthalmology Outpatient Department of the Research Institute of Ophthalmology. Two phenotypic methods were used for detection of biofilm production; qualitative Congo red agar (CRA); and quantitative microtiter plate. Polymerase chain reaction was used to determine the presence of ica A gene. **Results:** In Staph aureus, 60% were positive biofilm forming and 40% were negative biofilm forming by both phenotypic methods. All positive biofilm-forming isolates were positive for ica A gene production. In coagulase negative staph, 50% were positive biofilm forming and 50% were negative biofilm forming by both phenotypic methods. All positive biofilm-forming strains were positive for ica A gene. All negative cases by CRA and microtiter plate methods were negative for ica A gene except two isolates. All staphylococcal isolates were subjected to antibiotic susceptibility test to correlate biofilm formation with multidrug resistance in staph. **Conclusion:** There is high significant correlation between ica A gene presence and biofilm forming ability; however, the biofilm-forming ability of some isolates in the absence of ica A gene highlights the importance of further genetic investigations of ica-independent biofilm formation mechanisms.

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Evaluation of Serum Protein Markers in Diagnosis of Hepatocellular Carcinoma and in Carcinogenesis Risk Assessment in Chronic Liver Disease Patients

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Objectives: This study was done to assess the diagnostic value of the protein markers in both cirrhotic patients on top of HCV and in HCC patients on top of HCV in comparison to normal controls. Methodology: A total number of 100 subjects including HCC, cirrhotic patients on top of HCV and normal controls were subjected to serum protein markers analysis for alpha feto protein, Apolipoprotein A1 (Apo A1), Apolipoprotein A2 (Apo A2), Insulin like growth factor 1 (IGF1) and Insulin like growth factor 1 receptor (IGF1R) by western blotting technique. Written informed consents were obtained from all patients before enrollment into the study. Results: It was found that alpha feto protein alone could not be used alone as a screening test while Apo A2 as a serum marker could be used as a non invasive screening test to differentiate a case of HCC from cirrhotic HCV patient. The all four markers were able to discriminate normal persons from HCC and cirrhotic HCV patients effectively. Conclusion: We concluded that proteomics analysis being non invasive, rapid and sensitive is a novel gate that can serve in early diagnosis and screening of HCC and cirrhotic HCV patients.
A Study of Microbial Air Quality before and after Hydrogen Peroxide Fumigation of Ophthalmic Operative Theatre in the Research Institute of Ophthalmology in Egypt

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This study aimed to assess air quality in operating rooms (OR), expressed as colony forming units (CFU)/m3, during ophthalmic surgeries; exploring the effect of hydrogen peroxide vapor HPV fogging of OR and number of attending personnel on air contamination in the vicinity of the operated eye. Data collection by active air sampling and observations was performed during 452 ophthalmic procedures. The results showed median total viable count (TVC) at rest was 27.5 CFU/m3 range (0-275) and 30 CFU/m3 range (0-170) pre HPV and post HPV samplings respectively. The median TVC in operational was 60 CFU/m3 (range = 0-500) pre-HPV and 75 CFU/m3 (range = 20-270) post HPV. Results showed a non-significant correlation between the total CFU/m3 per operation and prior application of HPV (P = 0.077, n = 452). However, air samples exceeding the maximum CFU/m3 acceptable levels pre- and post-fogging was decreased from 42% to 40.3% (P= 0.8) at rest and from 15.5% to 12.8% (P= 0.6) at operation. A significant weak positive correlation was also found between TVC in CFU/m3 and the number of persons attending the operation (r = 0.159, P = 0.006, n = 296). Conclusion: Air fumigation with HPV disinfectant and traffic flow has a positive impact on the OR environment.

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Needle Stick Injury: Risk Factors and Control Strategies

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Background: Occupational exposure to needle stick injury (NSI) is probably one of the most common accidents in medical care practice. Objective: Our aim was to review risk factors of exposure to NSI and the possible solutions for risk management. Study design: Our project was implemented from January to May 2016 in OBGYN hospital in collaboration with Quality Assurance and Accreditation Unit, Cairo University Hospitals. A retrospective study was carried out on 160 healthcare workers (HCWs) analyzing the most important risk factors involved in NSI events. We reviewed accident reports of NSI for physicians, nurses, technicians and housekeeping workers. All high-risk units were involved in our study. Then, we developed improvement strategies based on statistical results. Results: Nurses represented 62.5% of the study group. Large share (42.5%) of injuries was encountered in inpatient units (particularly medical floors and ICUs) and in emergency rooms (19%). The situation of exposure was mainly during use of the device through sampling, IV injection (53%). Inadequate training and under-reporting were among the most important risk factors. Conclusion: Educational programs focusing on safe handling and disposal of sharps, clear policies and procedures, use of safe needle devices and application of post-exposure prophylaxis were the most important strategies for injury control. An action plan for reducing NSI incidents was developed and indicators for attitude improvement were established in order to improve patient safety.

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Comparing Urine Samples with Vaginal Swabs in Detecting *Streptococcus Agalactiae* Carriage in Pregnant Women Using Chromogenic Media

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**Background:** Although Group B *Streptococcus* (GBS) is part of the normal microflora in the vagina of many women; it is well recognized as a human pathogen, especially for causing septicemia, meningitis and other serious invasive disease in neonates due to vertical transmission from mother during labor. **Objectives:** The purpose of this study was to evaluate urine specimens in comparison to vaginal swabs as effective samples for screening GBS carriage among pregnant females using chromogenic media. Also to compare the sensitivity of chromogenic media; Granada agar (GRAN) and ChromID Strepto B (STRB) with that of a conventional medium. Tryptic soy agar with 5% sheep blood (TSA) in detecting GBS colonization in pregnant females. **Methodology:** Fifty females at 35 - 37 weeks of pregnancy were included in the study. One vaginal swab and one urine sample were taken from each female and they were inoculated onto selective Lim broth and incubated for 18 - 24 hours followed by subculture on TSA, GRAN and STRB. The plates were incubated for 24 hours and if culture was negative, incubation was extended to 48 hours. GBS growth confirmation was done using latex agglutination test. **Results:** GBS was detected in 16 (32%) cases on both TSA and GRAN, whereas on STRB, GBS was detected in 19 (38%) cases in at least one sample type. There was no difference regarding the sample types in detecting GBS as 17 (34%) of the vaginal swabs and 17 (34%) of the urine samples showed positive cultures on at least one of the three media, and on each medium there was no statistically significant difference between vaginal swabs and urine samples in detecting GBS. The sensitivity of STRB, GRAN and TSA in detecting GBS in the vaginal swabs was 94%, 88% and 82%, while in the urine samples it was 100%, 76.5% and 76.5%, respectively. **Conclusions:** Urine samples are as effective as the vaginal swabs in detecting GBS colonization in pregnant women. STRB was more sensitive than the other media in detecting GBS especially in the urine samples, while the sensitivity of GRAN was comparable to TSA.

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Posters
IL-33 in stable and exacerbated COPD

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Background: Chronic obstructive pulmonary disease (COPD) is a debilitating disease characterized by progressive airway obstruction. Inflammation is a pathognomonic feature and is responsible for the exacerbations in COPD. Interleukin 33 (IL-33) is a proinflammatory cytokine belongs to the IL-1 family that is expressed by various cells. IL-33 has been suggested to play an important role in the pathogenesis of COPD. Objectives: we aimed in this work to investigate usefulness of IL-33 levels in patients with COPD during both the stable state and exacerbation attacks, also, to characterize the association of IL=33 with the clinical finding. Methodology: This study included 40 COPD patients and 10 healthy controls recruited from Assiut University hospitals. All participants underwent clinical assessment, pulmonary function tests, and laboratory assessment. We measured the serum levels of IL-33 by ELISA in 40 COPD patients during the exacerbation attacks and the stable state comparing their levels to 10 healthy controls. Results: Serum IL-33 levels were significantly higher during the exacerbation attacks in COPD patients than during stable state (75.5±42.7 vs 64±37.3: \(p=0.017\), respectively). Still IL-33 levels elevated in COPD patients compared to healthy controls (78.5±38.9 vs 25.3±14.4; \(p<0.001\), respectively). Conclusion: IL-33 levels are correlated with exacerbations in COPD.

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Relationship between Fecal Calprotectin and *Entamoeba histolytica* among Patients with Gastroenteritis in Kirkuk city-Iraq


Objectives: Gastroenteritis due to Entamoeba histolytica among patients in Kirkuk city was investigated. The role of fecal calprotectin (FC) was measured during intestinal amoebiasis. Methodology: A total of 419 stool samples were collected from patients attending to specific clinics of gastroenteritis in Azidi Teaching Hospital and Kirkuk General Hospital, who suffer from gastrointestinal disorders (GITDs), such as diarrhea, vomiting, nausea, diarrhea altered by constipation. Stool samples were collected and divided into several fractions for parasitological tests (direct and concentration) for detecting *Entamoeba histolytica* and other parasitic infections. Fresh portion was extracted for fecal calprotectin using ELISA technique. One to two ml of venous blood was drawn for complete blood count (CBC) for each stool sample direct double wet preparations were performed then confirmed by flotation technique. Overnight extracted fecal sample was tested for FC using ELISA-copro kit. Total White blood cell count (WBCs) and neutrophil count was calculated from blood samples using automated complete blood count machine.

Results: The overall rate of parasitic infections was 82.81 % distributed in 347 stool sample. *Entamoeba histolytica* was contributed in 103 stool samples with a rate (24.85 %). Inflammatory bowel disease (IBD) due to intestinal amoebiasis were highly recorded among patients aging from 31 to 40 years (74.34%) followed by 71.42 % among patients aging from 11 to 20 years. The same parasitic infections were high among patients with irritable bowel syndrome (IBS) aging from 41 to over than 60 years old. Regarding patient genders, *Entamoeba histolytica* in relation to IBD and IBS was highly recorded among males than in females. Fecal calprotectin mean level above 50 ng/ml as positive was recorded among 50 stool samples versus 37 negative mean levels as Fc was below 50 ng/ml. Positive FC was higher among females than males. Leucopenia was dominant among positive FC samples and neutrophilia was highly associated with positive FC contrary to normal neutrophil count among FC negative samples. Regarding pH of the stool samples high rate 59.22 % of the samples had pH range of 6.1 to 7. Conclusions: *Entamoeba histolytica* rate is high among patients with gastroenteritis particularly among IBD patients. ELISA Fecal calprotectin is a good marker for detecting the injury caused by the parasites to the host.

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Characterization of Probiotic Bacteria Isolated from Different Dairy Products at Assiut Governorate

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Background: Probiotics are living, health-promoting microorganisms that are incorporated into various kinds of food. Members of the genera Lactobacillus and Bifidobacterium are the most commonly used probiotics. Objectives: to isolate Lactobacillus and Bifidobacterium from different dairy products, to detect its growth inhibition activities against pathogenic bacteria, comparison between conventional methods for identification using PCR as gold standard. Also to evaluate its hemolytic and enzymatic activities. Methodology: Isolation of Lactobacillus and Bifidobacterium were done by using De Man Rogosa Sharpe (MRS) agar and Bifidobacterium agar respectively. Biotyping were done by carbohydrate fermentation tests. Probiotic properties were determined by growth at different temperatures, different NaCl concentrations, PH and bile tolerance. Antibacterial activity of isolated probiotic bacteria were examined on three indicator pathogenic organisms. Genes and species specific PCR primers were used for identification of Lactobacillus and Bifidobacterium species. Also hemolytic and enzymatic activity were determined. Results: The identified Lactobacillus spp. were L. acidophilus 54 (29.5%) , L. fermentum 50 (27.3%) , L. rhamnosus 34 (18.6%), L. plantarum 27 (14.8%), L. paracasei 13 (7.1%) and LGG 5 (2.7%). The Bifidobacterium were B. Breve 59 (31.7%) , B. dentium 42 (22.6%), B. bifidum 53 (28.5%), B. subtile 15 (8%) B. longum 6 (3.2%), B. animalis 7 (3.7%) and B. infantis 4 (2.2 %). All the isolates found to tolerate low PH and bile salts. All isolates were non hemolytic and had antibacterial activity against three indicator pathogenic strains. Taking PCR as gold standard, the sensitivity of the culture was 100 %for all species, sensitivity of biochemical was 94.7% in Lactobacillus, specificity of culture and biochemical in Lactobacillus spp. was 93.86%. In Bifidobacterium spp. the sensitivity of biochemical was 95.97% and specificity of culture and biochemical was 94.79%. Lactobacillus and Bifidobacterium spp. Produced beneficial enzymes as β-galactosidase which is beneficial for lactose intolerance. All the species did not produce β-glucuronidase which has carcinogenic effect. Conclusion: Rayeb, yogurt milk powder and milk based cereals can be used as potential source of probiotics because they tolerate acidic media, bile salts ,non hemolytic with good antibacterial activity against other pathogenic bacteria . Also, they have beneficial enzymatic activities.

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Expression of T helper 17 cells Retinoid Acid Related Orphan Receptor Gamma t (RORγt) mRNA in Systemic Lupus Erythematosus

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Background: Systemic lupus erythematosus (SLE) is a systemic autoimmune disease characterized by various immunological abnormalities, including dis-regulating activation B lymphocytes with subsequent production of a large quantity of autoreactive-antibodies. It is also hypothesized that T helper-17 lymphocytes (TH-17) may have a role in this disease. The aim of the present work was to determine the role of TH-17 cells expressing the retinoid acid related orphan receptor gamma t (RORγt) mRNA in the pathogenesis of SLE disease. Subjects and Methods: The study was conducted on 30 female SLE patients fulfilling SLICCA/ACR criteria for SLE classification and 30 healthy subjects sex- and age-matched apparently as control group with no previous history of autoimmune diseases. SLE Disease Activity Index was calculated for SLE patients. Level of expression of (RORγt) mRNA of IL-17 were measured in all patients and control by quantitative Real Time Polymerase chain reaction (Q PCR). Results: The mean±SD of RORγt mRNA expression levels in SLE patients (3.6±6.1) was significantly reduced compared to that of controls (11.7±13.7) (p= 0.008). Neither the clinical features of SLE nor the laboratory parameters have significant relationship with RORγt expression. Conclusion: The reduction of RORγt mRNA expression in TH-17 lymphocytes may point out to the regulatory protective role of TH-17 in the pathogenesis of SLE. Agents that block the functions of these cells should be tried.

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Detection of Helicobacter Pylori in Egyptian Patients with Calcular Obstructive Jaundice

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Background: Bacterial infection was described as one of the precipitating factor in cholesterol gallstone formation and many studies have confirmed the presence of Helicobacter species in the hepatobiliary system. The aim of our study was to detect the presence of Helicobacter species in bile juice by polymerase chain reaction (PCR) in patients presented with calcular obstructive jaundice. Methods: Bile samples from 75 patients presented with calcular obstructive jaundice were obtained during Endoscopic retrograde cholangiopancreatiography (ERCP) and subjected to nested PCR for H. pylori DNA detection and bacterial culture. Gastric biopsies were also taken for H. pylori rapid urease and culture. Results: Helicobacter DNA was detected in 11 out of 75 bile sample by nested PCR, 0 were positive by bile culture, 30 were positive by rapid urease test from gastric biopsy and 5 were positive by gastric biopsy culture. Conclusion: H. pylori was found in the biliary system, in patients with calcular obstructive jaundice suggesting that these bacteria may be of etiological importance in gallstone formation.

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Role of Galactose Specific Lectin 3 and CYP17A1 Gene Polymorphism in Breast Cancer


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Background: Breast cancer (BC) is the most frequent malignant tumor and is considered the second leading cause of cancer related deaths among women worldwide. Galactose specific lectin 3 (Gal-3) is a β-galactoside-binding animal lectin that contains carbohydrate-recognition domains and displays multiple related functions. The human CYP17A1 gene, which encodes the enzyme cytochrome P450 17A1, plays a key role in sex steroid synthesis.

Objective: The aim of this study was carried out to evaluate the role of serum Gal-3 as a diagnostic tumor marker in BC and to assess the potential association between the CYP17A1 gene polymorphism and BC.

Subjects and Methods: The present study was conducted on 35 breast cancer females patients compared to a control group of 35 healthy females of matching ages. Estimation of Gal-3 in serum using enzyme linked immune-sorbent assay (ELISA) technique and detection of CYP17A1 gene polymorphism using polymerase chain reaction - restriction fragment length polymorphism technique (PCR – RFLP) were performed in all participants.

Result and Conclusion: The results of this study suggest that the Gal-3 showed increase in breast cancer cases and could be used as a useful marker of BC. On the other hand there was no significant association between CYP17A1 gene polymorphism and BC.

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[7] Diagnosis of *Helicobacter pylori* Infection in Children with Dyspepsia and Bad Breath Using Saliva Samples and a Modified Commercial Kit

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**Background:** *Helicobacter pylori* is a spiral-shaped, Gram negative bacterium that persistently colonizes the gastric mucosa of humans. This bacterium plays an important role in the initiation of gastrointestinal diseases, particularly peptic and duodenal ulcers, as well as gastric cancer and gastric lymphoid tissue lymphoma. It has been estimated that *H. pylori* inhabits at least half the world’s human population. Numerous retrospective and prospective studies have shown a significant correlation between *H. pylori* infection and distal gastric cancer risk. Additionally, *H. pylori* infection is associated with low socioeconomic status, crowded living condition and poor personal hygiene. The infection is usually acquired in early childhood. The prevalence of *H. pylori* infection in gastric biopsies appears to be higher in developing countries compared to developed countries. In Egypt, the prevalence of *H. pylori* infection may be as high as 80% in adults, whereas the prevalence in children is not definitely known. In this study, we adapted the commercial kit used for the detection of *H. Pylori* antigens in stool for the diagnosis of *H. pylori* infection in children by detection of *H. pylori* specific antigens in saliva samples. The main modification was to use effective centrifugation followed by heating with suitable buffer. The Method proved to be highly specific and sensitive. This protocol up to our knowledge has not been previously reported by other investigators and can be clinically utilized as doctor's office test.
Validity of Salivary Polymerase Chain Reaction in Diagnosis of Helicobacter pylori Among Egyptian Patients

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Objective: Helicobacter pylori is highly endemic in Egypt. Salivary polymerase chain reaction (PCR) offers an easy and safe approach for disease detection as saliva contains an abundance of its biomolecules. Aim of the Work: To evaluate the validity of salivary PCR as a quantitative method in diagnosis of H. pylori. Methodology: This study included 50 attendant patients of Gastrointestinal Endoscopy Unit, Faculty of Medicine, Cairo University, Egypt. They all proved histologically to have H. pylori–induced gastric and/or duodenal pathology. Another 50 patients negative for H. pylori were included as control group. All patients underwent stool antigen test and salivary PCR. Results: Prevalence of H. pylori in clinically manifested Egyptian patients was 62.5%. The commonest endoscopic findings were gastric affection (90%), and third of cases (34%) showed definite ulcerative lesions. Salivary PCR test was significantly (P < 0.001) higher in H. pylori patients (mean, 10179.0 ± 20244.1 copies/dL) with wide range than in control group (mean, 99.2 ± 17.9 copies/dL), with sensitivity 100%, specificity 82%, and overall accuracy of 91%. Among the common complaints, it was significantly related to heartburn. Conclusions: Salivary PCR proved to be a reliable diagnostic test, with sensitivity 100%, and accuracy reached 99% at cutoff level = 130 copies/dL (area under the curve was 0.998 at confidence interval = 0.993–1).

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Evaluation of Midkine and Golgi protein 73 as a Diagnostic Biomarkers in Hepatocellular Carcinoma Patients

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Background: Serum Midkine and Golgi protein 73 (sGP73) are a promising biomarkers for detection of HCC. Objectives: The aim of this work was to assess the clinical utility of Midkine (MDK) and Golgi protein 73 (GP73) among Egyptian hepatocellular carcinoma (HCC) patients in comparison with α-fetoprotein (AFP). Methodology: This study included 96 patients; 40 of them had proved HCC, 36 patients had chronic liver diseases (CLD) and 20 apparently healthy individuals were considered as controls. Clinical examination, abdominal ultrasonography and triphasic computerized tomography for focal lesion were performed. Liver function tests, hepatitis markers and serum AFP were measured. Serum MDK and GP73 levels were determined by ELISA. Results: There was a high statistically significant difference in MDK and GP73 between HCC and control group. For diagnosis of HCC, receiver operating characteristic curve (ROC) showed that serum MDK and GP73 levels had area under the receiver operating characteristic (AUROC) curve of (1.00, 0.952), sensitivity of (100%, 90%) and specificity of (88.9%, 83.3%) at a cutoff point (1585.0 pg/l, 42.5 ng/l) respectively. For diagnosis of early HCC, ROC curve showed that the serum MDK and GP73 levels had the AUROC curve of (0.869, 0.941), sensitivity of (88.9%, 94.4%) and specificity of (79.5%, 83.3%) at a cutoff point (3825pg/l, 84.5 ng/l) respectively. Conclusion: MDK and GP73 serum levels are highly increased in HCC patients. Their diagnostic performance is superior to that of AFP.

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Mupirocin Resistance Among Methicillin Resistant 
*Staphylococcus Aureus* MRSA Causing Surgical Site Infection 
(SSI) From an Egyptian Tertiary Hospital

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**Background:** Emergence of mupirocin resistance has become a great concern in the last few years. Topical mupirocin is used to eradicate nasal carriage and treat local infections with MRSA. **Objectives:** to determine the prevalence of mupirocin resistance among MRSA isolates causing SSI, and determine their biofilm production and antibiotic susceptibility pattern. **Methodology:** A total of 30 non-duplicate MRSA isolates from 150 patients diagnosed as surgical site infection (SSI) were identified using cefoxitin disc,Mupirocin resistance was assessed using MIC method (E-test) and polymerase chain reaction (PCR) targeting *MupA* gene. Biofilm-formation was tested using Congo red agar (CRA) and tissue culture plate (TCP) methods. **Results:** Out of the 30 MRSA strains, 3 isolates (10%) were detected as mupirocin resistant by PCR (carried *MupA* gene), but no resistance was detected by the MIC method (E-test). All mupirocin resistant isolates were biofilm producers and the biofilm producers showed more resistance than non producers. **Conclusion:** mupirocin resistance and biofilm formation are a warning signs, so its detection among MRSA isolates causing SSI lead to control its spread, treat patients with appropriate antibiotics, and make adherence to infection control strategies and practices.

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Percentage of CD4 Positive Cells in Venous Blood of Helicobacter Pylori Chronic Ulcerative Gastritis Patients before and after Eradication of Infection

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Background: Helicobacter pylori (H. pylori) infection is acquired early in life and usually persists for the lifetime of the infected host. Infection is associated in most of the infected people with the development of chronic gastritis and peptic ulcers. H. pylori evades host responses to cause a chronic infection and promote carcinogenesis in the aforementioned subpopulation of those infected. Despite intense research in the field, the mechanisms by which H. pylori evades the host immune response are still unclear. Objective: In this study, we tried to explore a distinct avenue by which H. pylori may alter or hide from the innate immune response. Methodology: We used flow cytometric assessment of the CD4% and CD8% in the venous blood of patients infected with H. pylori and having erosive gastritis. This assessment was done before and after treatment of the infection. We reported a significant reduction of CD4+ve population in peripheral blood of the infected patients compared to control group (22-26% compared to 34-59%). This reduction almost returned to normal after successful treatment of the infection. Conclusion: We conclude that early diagnosis and treatment of H. pylori infection is a valuable approach to protect patients from immunological changes that may contribute to invasive complications of H. pylori gastric infection.

(this paper is prepared from the intial phase studies of Master degree thesis in the Department of Medical Microbiology & Immunology . Faculty of Medicine-Tanta University)
Impact of Biofilm Production in Methicillin Resistant Staphylococcus aureus among Diabetic Foot Patient

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Background: Diabetic Foot Infection poses many problems in clinical practice. It is mainly polymicrobial, and Staphylococcus aureus is the most frequent pathogen isolated. Objectives: To determine the prevalence of methicillin resistant S. aureus (MRSA) and MRSA biofilm production among diabetic patients with chronic leg ulcers. Methodology: This study included 150 patients with infected diabetic foot ulcers. VITEK 2 system was used to identify isolated bacteria. Colonies of S. aureus were screened for methicillin resistance on Mueller–Hinton agar supplemented with oxacillin at 4 μg/mL. Antibiotic sensitivity test was investigated using Kirby Bauer Disc Diffusion method. Detection of biofilm formation was investigated by tissue culture plate method. PCR was performed for detection of icaA and icaD genes responsible for biofilm production. Results: S. aureus was isolated from 70 (46.6%) patients. Among the 70 S. aureus, 34 (22.6%) were (MRSA), Pseudomonas aeruginosa 36(24.0%), Klebsiella pneumoniae 25(16.6%) and E.coli were 19(12.6%). Twenty eight out of 34 tested MRSA (82.35%) had the ability to form biofilm. Twenty five isolates (73.3%) were strong biofilm producers, 3 isolates (8.8%) were moderate biofilm producer and 6 isolates (17.6%) were non biofilm producers. Twenty two were found to be positive for both icaA and icaD genes, On the other hand eight isolates were negative for both genes. Conclusion: A high prevalence of biofilm producing MRSA was detected in S. aureus patients with Diabetic foot.
Peripheral cytokines and T regulatory cells in hepatocellular carcinoma patients with viral hepatitis after transarterial chemoembolization (TACE)

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Hepatocellular carcinoma (HCC) is a primary malignancy of the liver. Tumors can recruit, and promote expansion of regulatory T cells (Tregs) to suppress antitumor immune responses for survival and progression. Furthermore, there is a strong evidence for the potential roles of cytokines in promoting HCC carcinogenesis and progression. We aimed to evaluate the frequency of Treg cells and serum levels of IL6 and IL10 before and after transarterial chemoembolization (TACE). Methodology: A cross sectional study, included 34 HCC patients and 10 healthy controls, was initiated at Assiut University hospitals. Peripheral Treg frequency was evaluated by Flow cytometry. IL6 and IL10 serum levels were evaluated by ELISA before and after chemoembolization (TACE). Results: HCC patients had a higher significant level of IL6 and IL10 when compared to control healthy group. However, after treatment there was an elevation in the levels of IL6 and IL10 for followed by decrease to the baseline levels. Patients with large tumors (≥5 cm) showed higher levels of both IL 6 and IL 10 than those with smaller tumors. Moreover, HCC patients showed a higher frequency of Treg cells in compare to healthy control group. No significant correlation was found between the frequency of Treg cells and IL10 before and after treatment. In conclusion HCC patients have significantly higher levels of IL 6, IL 10 and higher percent of Tregs than healthy individuals, their levels are altered after chemoembolization. IL 6 have a potential in reflecting patient's condition after treatment, thus, can help in monitoring therapy.

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