Evaluation of antimicrobial susceptibility of gram negative bacilli isolated from nosocomial infection in general hospital Tehran, Iran 2011

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Background: Antibiotic-resistant pathogens are problem in many geographic areas special in nosocomial infection and ICU admitted patients. Life threatening infections due to multi-drug resistant gram negative microorganism are a medical emergency problem in hospitals. This study aim was evaluation of antimicrobial susceptibility of gram negative bacilli in nosocomial infection.

Methods: In a cross sectional study in general hospital Tehran (Iran) during one year (2011), samples of patients with criteria of nosocomial infection by National Nosocomial Infections Surveillance System (NNIS)) were cultured and evaluated by disc diffusion methods, for six antibiotics (Cefazidim, ciprofloxacin, ceftrixone, imipenem, Gentamicin, Trimethoprim-sulfamethoxaxol).

Results: In this study 372 positive samples were evaluated. The most common site of isolation was urinary system. The most common isolated organisms were E.coli (2/69%), Pseudomonas aeruginosa (57/19%) Kelebsiella pneumoniae (4/7%). Resistance of E.coli to imipenem, cefazidime, ceftrixone, ciprofloxacin, Gentamicin and Trimethoprim-sulfamethoxaxol respectively was 86.7%, 94.25%, 95.25%, 88.25%, 77%, 91.75% and pseudomonas aerugenosa resistance respectively was: 93%, 93%, 95.5%, 93.75%, 90%, 95.50% and also Kelebsiella pneumoniae resistance respectively was: 93%, 97.25%, 97.25%, 94.50%, 85.50%, 94.50%.

Conclusion: Antimicrobial resistance is an emerging problem. Continuous monitoring of antimicrobial susceptibility and strict adherence to infection prevention guidelines are essential to eliminate major outbreaks in the future.

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Frequency and anti-biogram pattern of enterococci species isolated from various clinical samples in Shahid Mohammadi Hospital, Bandar-Abbas, Iran

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Background: Enterococci are Gram-positive cocci, usually habitat the alimentary tract of humans in addition to being isolated from environmental and animal sources. Enterococci have emerged as an increasingly important cause of nosocomial infections with high morbidity and mortality rate in the last decade. Since they are intrinsically resistant to most commonly used anti-biotics, it is necessary to determine their anti-biogram pattern to inform the effective antibiotics, as well as decrease the cost and duration of hospitalization. This study was done to determine the frequency
and anti-biogram pattern of enterococci species collected in Shahid Mohammadi hospital.

**Methods:** In this descriptive cross sectional study, performed between March 2010 and March 2011, about 4487 various clinical specimens of hospitalized patients were investigated for enterococci species. The specimens were cultured on Blood agar, EMB and Chocolate agar. Suspicous colonies were identified by Gram staining, growth in bile salt and NaCl 6.5% media. Antiibiogram patterns were determined by Kirby-Bauer method on Mueller-Hinton medium. Clinical and microbiological data was analyzed by SPSS16 software.

**Results:** A total of 55 (4.47%) species of enterococci was isolated from 1229 positive cultures. Enterococci was mostly (34.5%) obtained from old age (>65y) patients and internal (>50%) wards especially internal 1 (23.6%), Urinary tract (67.3%) and wounds (10.9%) were the two major sites of infection. Nitrofurantoin (80.6%) and vancomycin (75%) were most effective antibiotics, respectively. A high rate of resistance was observed to cephalosporines (78.6%) and Aminoglycosides (67.4%). Mortality rate was 16.3% with enterococcal infections.

**Conclusion:** In our study the most susceptible antibiotics were nitrofurantoin and vancomycin, which aligns with some other studies. Because of high frequency and multi-drug resistance of enterococci species, continuous monitoring of antimicrobial susceptibility and strict adherent to infection guidelines are essential to prevent and eliminate enterococci infections.

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Antibiotic resistance of *Pseudomonas aeruginosa* clinical isolates from Greece and Romania during the year 2009

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**Background:** One of the most difficult problems in hospitals is the appearance of an increased number of *Pseudomonas* antibiotic resistant strains. It is characterised by intrinsic and acquired resistance to many antibiotic classes causing the treatment of these infections difficult.

**Methods:** In this study we examined antibiotic resistance rates of clinical isolates of *P. aeruginosa* recovered in Saint George General Hospital of Chania and Regional Institute of Gastroenterology – Hepatology of Cluj Napoca.

From Greece we investigated a total of 246 strains of *P. aeruginosa* isolated from different samples. In Greece, 23 of the isolates from ICU, were susceptible to colistin only (9.3%) and resistant to all antibiotics. In Romania, 15 of the isolates were susceptible to colistin only (62.5%) and 2 isolates were resistant to all antibiotics (8.3%).

**Conclusion:** In Greece, amikacin and ceftazidime have remained active against the majority of *P. aeruginosa* clinical isolates. Results from Romania could reflect the implication of some hospital multi resistant *Pseudomonas* strains in nosocomial infections. Carbapenems should be used with caution due to elevated percentage of resistance against this class of antibiotics. Colistin is effective against multidrug resistant strains. Antibiotic policy in combination with infection-control measures are needed to prevent the spread of multidrug resistant and panresistant strains in the hospital.

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Current status of Glycopeptide intermediate and heterogenous Glycopeptide intermediate *Staphylococcus aureus* and their prevailing susceptibility pattern at two tertiary care hospitals of Pakistan

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**Background:** Glycopeptides have been used widely to treat methicillin resistant *Staphylococcus aureus* (MRSA) infections. Until recently vancomycin resistance among gram-positive bacteria had been thought to be uncommon but Glycopeptide intermediate *S. aureus* (GISA) and heterogenous GISA (hGISA) have been reported from various parts of world. Strains of hGISA have MICs considered to be in the susceptible range (<2.0 µg/ml) but contain a subset of the bacterial population that expresses the resistance phenotype. This study has been done to evaluate the current status of glycopeptides intermediate and heterogeneously