

that displacement ventilation, with a localized return grille placed near the patients' head, provided a higher LAQI and lower LMA around the patients than possible with a traditional overhead system indicating better control and containment of airborne contaminants.

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64.040

Follow Up for Nosocomial Infections (NI) in 1200 Post Surgery Patients at a Teaching Hospital in Guatemala

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Objective: To determine the incidence of nosocomial and early surgical site infection (eSSI) in 1200 patients.

Methods: 1200/8000 subjects who had elective or emergency surgery during a five month follow up in 2007 at Roosevelt Hospital, a third level reference and University Hospital in Guatemala were followed. Demographic, surgical procedure, antibiotic use surgical time and surgeon skill were collected. Patients were clinically evaluated at 24, 48, 72 and 120 hours after surgical intervention and complementary blood work up was performed following CDC guidelines to detect signs and symptoms of hospital acquired infections. The CDC (1982 and 1992) definitions for Nosocomial infections were applied. Gynaecological, paediatrics drainage of abscesses and immunocompromised patients were excluded. A data base in Excel was used and a descriptive analysis was done.

Results: 49/1200 (4.1%) patients showed clinical findings of infection, 77.6% SSI, 12.2% UTI and 10.2% catheter related infections. 319/1200 (5.3%) SSI in clean contaminated procedures was determined. Orthopaedic surgery of the low limbs showed the highest rate of infection (31/49). Factors such as length of surgery; less or more than one hour and surgeon experience were statistically significant for nosocomial infection. ($p < 0.005$).

Conclusion: A general incidence of 4.1% nosocomial infections, 77.6% early surgical site infection in clean and clean contaminated procedures were showed. The incidence of NI and eSSI is higher then in developed countries. Interventions to reduce the risk are urgently needed and strongly recommended

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Transmission of Vancomycin Resistance *E. faecium* Between Patients and the Environment in Iran

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Background: Vancomycin and teicoplanin are important antibiotics in the treatment of severe nosocomial infections caused by staphylococci and enterococci. The spread of vancomycin resistance among *E. faecium* is attributed to two

processes: clonal dissemination of the isolates carrying resistance determinants and horizontal transfer, is involved in resistance of vancomycin-resistant enterococci (VRE).

Methods: VRE isolates were collected from hospitalized patients, urban sewage, hospital sewage and surface water in Tehran. The identification of isolates was performed by conventional tests, and species identification was confirmed by using species-specific PCR for. The susceptibility tests of the isolates were performed and interpreted according to the guidelines from CLSI. The isolates were typed and screened using the PhP-RF plates and the representative of PhP typing method were selected for other tests. All of isolates were typed by Pulsed-field Gel Electrophoresis (PFGE) using SmaI

Results: All of VRE isolates were *E. faecium* and harbored vanA resistance gene. The MIC of vancomycin and teicoplanin were ≥ 128 and ≥ 24 $\mu\text{g/ml}$, respectively. All *E. faecium* were resistant to at least two antibiotics (ampicillin and erythromycin). All of isolates were susceptible to linezolid and dalfopristin-quinupristin. The isolates were extremely heterogeneous. The analysis distinguished 54 different PFGE types among 143 *E. faecium* isolates. One hundred and thirteen isolates belonged to 24 common types. The remaining 30 isolates (29.6%) were highly diverse, belonging to 30 clonal types. Isolates obtained from patients (49) were classified into 29 distinct PFGE types while all environmental samples (99) classified into only 25 types.

Conclusion: Among all isolates from different patients and environmental samples, 13 patient isolates along with 6 and 2 urban and hospital sewage samples were respectively indistinguishable. In the same way, 15 and 8 isolates from hospital and urban sewages had indistinguishable patterns. No identical patterns were seen between surface water samples and other samples. This result may suggest a possibility of transmission of VRE isolates between sewage and patients.

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Occurrence of Extended-Spectrum Beta-lactamases in Gramnegative Bacteria Isolated From Hospitalised Patients in Period 2005–2006

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Introduction: Extended-spectrum beta-lactamases (ESBL) are enzymes produced by some bacteria and are responsible for their resistance to beta-lactam antibiotics like penicillins, cephalosporins, cephamycins and carbapenems. Numerous chromosomal and plasmid-mediated types are known and may be classified by their sequences or phenotypic properties. This work presents the occurrence of beta-lactamases in two tertiary-care teaching hospitals