Clinicoetiological Study of Nosocomial Sepsis in Dermatology Ward


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Background: Patients admitted in dermatology ward are highly susceptible to nosocomial sepsis due to extensive denudation of skin with loss of protective barrier in several dermatoses and frequent and prolonged use of corticosteroids and other immunosuppressives. The mortality in dermatology ward can predominantly be ascribed to sepsis, directly or indirectly. There is paucity of data on epidemiological and etiological profile of sepsis in dermatology inpatients. This study was undertaken to study the incidence, etiology and antibiotic sensitivity profile of nosocomial sepsis in skin ward.

Methods: All patients developing nosocomial sepsis, defined as presence of two or more SIRS (Systemic Inflammatory Response Syndrome) criteria plus detection of focus of infection after 48 hours of admission, were included. They were assessed for risk factors, monitored for systemic complications and blood and other relevant specimens were sent for culture and antibiotic sensitivity testing.

Results: During study period, 40 of 860 inpatients (4.65%) developed nosocomial sepsis, majority suffering from vescicobuluous diseases (42.5%), erythroderma (25%) and toxic epidermal necrolysis (22.5%). Of these, 17 (42.5%) developed severe sepsis and 15 (37.5%) died. Total number of deaths during study period due to all causes were 22; thus sepsis contributed to 68.2% of deaths. Significant risk factors included use of immunosuppressives, presence of fever before admission, diabetes, smoking and concomitant systemic illness. The commonest gram positive organism isolated from all specimens was methicillin resistant staphylococcus aureus (MRSA). Gram negative isolates were acinetobacter, pseudomonas and klebsiella. On sensitivity testing, MRSA showed high sensitivity to vancomycin, linezolid, teicoplanin and rifampicin. Gram negative organisms were sensitive to cefoparzone-sulbactum, piperacillin-tazobactum, imipenem and meropenem.

Conclusions: Sepsis incidence was 4.65% in dermatology ward. Death occurred in 37.5% of these cases. Sepsis developed in patients with dermatoses involving large body surface area. MRSA was the commonest organism isolated. Antibiotic sensitivity pattern helped to formulate appropriate treatment guidelines.

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Knowledge and Performance of the Universal Precautions Among Yemeni Nurses

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Objectives: The purpose of this study was to examine the level of knowledge and performance of the universal precautions among Yemeni nurses, to outline educational and training needs and focus on possible activities to remedial action.

Methods: this survey was carried out at Al-Whadah University Hospital in Thamar governorate during May through July 2007. A total of 84 nurses participated in this study and completed the written questionnaires. The response rate was 100%.

Results: The average knowledge of the universal precautions was 173.77 ± 47.02 (scores ranged from 75 to 225). The performance level average of the universal precautions was 54.18 ± 14.53 (scores ranged from 28 to 70). The findings of these 3 items ("I do not dispose the needles as crooked or cut", "I always wear a mask when there is a risk of being contaminated with the blood or body fluid of a patient", ‘I always wear a protection goggle when there is a risk of being contaminated with patient blood or body fluid") showed that the level of knowledge and performance of the nurses were very low. The correlation between knowledge and performance of the universal precautions showed strong and positive correlation (r = 0.707, p = 0.001).

Conclusion: This study demonstrated that nurses’ knowledge and performance level of the universal precautions was relatively high, but at the same time, they had a wrong understanding of some items. So that it reveals a definite need of stepping up educational and motivational methods for the use of the universal precautions by health workers in hospitals.

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Estimation of Occupational Exposure to Blood and Body Fluid Among Healthcare Trainees

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Introduction: Blood and body fluid (BBF) exposure is among the most important occupational hazard that medical personnel face each day. The risk for such exposure is greatest during the training and initial years of professional practice. Stressful work situations and cumbersome procedures for reporting often contribute to under reporting of such injuries. This study from Christian Medical College, a training institution in southern India, attempts to estimate the incidence of such occupational injuries amongst trainee doctors.

Methods: Institutional rules mandate reporting of all occupational exposure BBF. HIV and HbsAg status of index
cases are performed under this program. A retrospective analysis of reported exposure to BBF in a six month period between January and July 2006 was done. HbsAg testing, while not routine, is done for patients undergoing interventional procedures and where indicated.

**Results:** 192 episodes of exposure to BBF were notified. The annual incidence of occupational exposure to BBF among trainee doctors was reported at 67 episodes per 100 person-years. In 149 (77.6%) episodes the HbsAg status of the index case was determined. 18 (12.1%) (95% CI 6.8 to 17.3) of them were positive for HBsAg. During the same period the HbsAg positivity rate for all inpatients who had the test done was 3.5% (95% CI 3.0 to 3.92). Correction for under-reporting by comparing HBsAg surface antigen rates among index cases and prevalent hospital estimates provided a revised conservative estimate of incidence of exposure to BBF among trainee doctors of 130 episodes per 100 person-years. Trainee doctors were 2.3 times more likely to report injuries in the first three months of their training as compared to the last three months.

**Conclusion:** Under-reporting of occupational exposure to BBF is common in training institutions. Estimates of the true burden can be arrived by comparison of HBsAg rates amongst index cases to prevalent rates.

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64.023 Detection and Characterization of Metallo Beta-Lactamases in Clinical Isolates of *Pseudomonas aeruginosa* from Different Hospitals in Delhi, India

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**Background:** Metallo Beta-lactamases (MBLs) mediated resistance to carbapenems in *Pseudomonas aeruginosa* is of serious clinical concern since these drugs represent the last therapeutic resort available. Several phenotypic tests for detection of MBLs in various species of bacterial pathogens have been advocated. Most of the available phenotypic tests have never been evaluated using Indian clinical isolates. The present study was therefore, undertaken to evaluate various available phenotypic tests for detection of MBLs in Indian clinical isolates of *P. aeruginosa*.

**Methods:** Two hundred non replicate clinical isolates of *P. aeruginosa* from different hospitals of Delhi were screened for susceptibility to imipenem and ceftazidime using the CLSI disk diffusion method. All imipenem nonsusceptible and/or ceftazidime resistant isolates were tested by Modified Hodge test on Mueller Hinton Agar (MHT-MH), Modified Hodge Test on Macconkey agar (MHT-MA), IPM-EDTA + SMA Double Disk Synergy Test (DDST), Combined Disk Test (CDT), Extended Disk Synergy test (eEDST) and EDTA-IPM Microbiological assay (EIMA). Polymerase Chain Reaction (PCR) using family specific primers was employed to confirm the presence of MBL genes.

**Results:** As many as 76/200 (38%) of the isolates were screen positive. MHT-MH detected 41/76 (54%), MHT-MA 63/76 (83%), eEDST 62/76 (82%), CDT 55/76 (72%), DDST 51/76 (67%) and EIMA 45/76 (62%) of the screen positive isolates as MBL producers. PCR confirmed the presence of *bla* VIM/*bla* IMP genes in all the phenotypic test positive isolates.

**Conclusion:** A very high proportion (32%) of our isolates of *P. aeruginosa* were MBL positive. There is thus, a need to test MBL production in clinical isolates routinely for continuous monitoring. Of the phenotypic tests evaluated Modified Hodge Test on Macconkey’s Agar (MHT-MA) was most sensitive. The MBLs encountered were of VIM and IMP type, the common types prevalent all over the world.

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64.024 What does it take for a Doctor to Wash?

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**Introduction:** Hand Hygiene, remains the single most significant measure to prevent nosocomial infections. However, the importance of this simple procedure is not sufficiently recognized by healthcare workers. We undertook this study in order to probe into reasons for non-compliance, which would be useful in impacting ‘Infection Control Practices’ in hospitals.

**Materials & methods:** An observational study, the participants are Doctors (N = 150) working in different wards at three different hospitals in Karnataka, India. They were observed for compliance with handwashing practices and interviewed on probable reasons for non-compliance.

**Results:** The study participants were doctors aged 23—42 (mean age = 29.6) years; 60% (N = 90) and 40% (N = 60) were males and females respectively. The average years of work experience in a hospital was 5.4 years. Handwashing compliance observed was 42.6%. Non-compliance among males and females was 52.2% and 26.6% respectively. All participants expressed the lack of institutional guidelines and support as the reason for non-compliance and in turn the prevalence of Nosocomial infection rates. Other factors were the lack of encouragement 80%; high workload 80%; understaffing or downsizing of staff 70%; lack of a role model among the senior staff 60% and working in a critical care setting 50%. It is interesting to note that 80% of the doctors felt that it was not necessary to wash hands between patients and 30% claimed to have never washed hands between patients. Universal precautions were perceived as protective by 58% and expensive by 16%.

**Conclusion:** Many studies investigating interventions designed to improve handwashing may have initial improvements in compliance. However, long-term continued compliance has been disappointing. It is therefore necessary to apply interventions that focus on identifying risk factors for non-compliance, and designing interventions geared toward sustainability such as ‘Infection Control Programmes’ and a link between monitored Nosocomial infection rates and prevention efforts.

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