

Risk factors and clinical outcomes of multidrug-resistant *Acinetobacter baumannii* bacteremia in a University Hospital, Thailand

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Background: Multidrug-resistant (MDR) *Acinetobacter baumannii* has become a major threat of nosocomial infection worldwide. The study aimed to assess the incidence of bacteremia due to MDR *A. baumannii*, factors associated with the infection, and clinical outcomes.

Methods: A retrospective study was conducted for evaluating 49 episodes of *A. baumannii* bacteremia in adult patients admitted to a university hospital in Northeast Thailand between 2005 and 2007. Comparison of the data between patients with susceptible *A. baumannii* bacteremia and those with MDR *A. baumannii* bacteremia was performed.

Results: The incidence of MDR *A. baumannii* bacteremia was 3.6 episodes per 10 000 hospital admission. The mean (SD) age of the patients was comparable between the 2 study groups [56.9 (17.3) years in susceptible group and 59.4 (16.8) years in drug-resistant group]. Most of the patients had pre-existing diseases; cancer, chronic kidney disease, and diabetes mellitus were the 3 most common. The most common source of bacteremia was pneumonia. The significantly independent factors associated with MDR *A. baumannii* bacteremia were prior ICU admission (odds ratio (OR) 10.01, 95% confidence interval (CI) 1.39-72.20), prior beta-lactam/beta-lactamase inhibitor use (OR 8.06, 95%CI 1.39-46.64), and prior carbapenems use (OR 11.40, 95%CI 1.44-89.98). Overall mortality rate was significantly higher in MDR group (48% vs. 91.7% in susceptible and MDR group, respectively, $p=0.001$). The significantly independent factors related to mortality were APACHE II score (OR 1.25, 95%CI 1.03-1.52) and secondary bacteremia (OR 14.86, 95%CI 1.37-161.90).

Conclusion: This study revealed that the significantly independent factors associated with MDR *A. baumannii* bacteremia were prior ICU admission and prior use of broad spectrum antibiotics. This infection caused high mortality rate. Emphasize on prevention, strict application of infection control and appropriate use of antibiotic could reduce the risk and control this infection.

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56.004

Assessment of health care workers occupational exposure to HIV and post-exposure prophylaxis (PEP) in health centers and hospitals of Addis Ababa, Ethiopia

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Background: Occupational exposure that places a worker at risk of HIV infection is a percutaneous injury, contact of mucous membrane or skin with blood or other body fluids. Exploring the extent of exposures, knowl-

occurrence of occupational exposures and knowledge and practice regarding HIV post-exposure prophylaxis among health care workers in health centers and hospitals of Addis Ababa.

Methods: A facility based cross-sectional study, involving 372 health care workers, was conducted in Addis Ababa from March to April 2008. A pre-tested, interviewer administered, structured questionnaire was applied for data collection. Odds ratio with 95% confidence interval and logistic regression analysis were employed to measure the degree of association between factors and identify the predictors for occurrence of needle stick injuries.

Results: The study revealed that 38.2% of health care workers experienced at least one needle stick injury in their life time and 19% of respondents experienced injury within the last one year. Rate of needle stick injury in the previous one year was estimated at 1.34 injuries per person. Factors associated with occurrence of injuries were being a nurse (AOR=15.39, 95%CI=3.70-18.05), having work experience for more than 10 years (AOR=2.68, 95%CI=1.30-5.54), working long hours (AOR=1.90, 95%CI=1.10-3.31), attending fewer patients per day (AOR=2.21, 95%CI=1.32-3.58), self perception of high risk HIV (AOR=2.05, 95%CI=1.10-3.82) and non-consistent use of personal protective equipments (AOR=1.67, 95%CI=1.01-2.76). Two hundred sixty four (71.0%) respondents had knowledge about HIV post-exposure prophylaxis.

Conclusion: The findings of this study indicated that occupational exposures were common among health care workers. Health facilities should make available to their system that includes a standardized written protocol and reporting unit for management of occupational exposures. Improvement of work environment and appropriate management of exposed cases, including addressing the psychosocial burden health workers face after exposure is also imperative.

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Healthcare workers compliance to infection control practices in the haemodialysis unit in Sungai Buloh Hospital Malaysia

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Background: The number of patients with end-stage renal failure treated with haemodialysis in Malaysia has been increasing in recent years. Haemodialysis patients are at a higher risk of developing infections either directly or indirectly via contaminated devices, equipment, environmental surfaces or hands of healthcare workers (HCWs). Thus compliance to infection control practices by HCWs is very crucial in the prevention of the transmission of infections among haemodialysis patients. The Haemodialysis Unit in our hospital has been in existence only for the past two years and

we would like to determine the compliance of the HCWs to the infection control practices.

Methods: We carried out a survey on the compliance to infection control practices among HCWs in the haemodialysis unit of our hospital over a two-week period. Two infection control nurses were stationed at the unit and a standard checklist was prepared. The CDC recommendations for preventing transmission of infections among chronic haemodialysis patients were used as a guide (MMWR 2001;50(No. RR-5)).

Results: The unit has 25 dialysis machines with an average number of 46 patients per month. Four medical assistants, 4 nurses and 4 healthcare attendants were observed during the study period. Hepatitis B seropositive patients were managed in a separate area with dedicated dialysis machine for Hepatitis B seronegative patients. The HCWs were most compliance to wearing gloves, provided dedicated items, medications or supplies for single patient use (100% compliance). The HCWs were least compliance to hand washing and removal of gloves in between patients (9% compliance rate). The staff failed to clean or disinfect the prime buckets (0%).

Conclusion: The results of the study provided a baseline information on the compliance of the HCWs to infection control practices in the care of haemodialysis patients in our hospital. Continuous education and training of the HCWs in infection control practices which are unique to the haemodialysis centre are required in order to create the awareness of the importance of adherence to these practices and thus will help reduce infections in the patients.

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Prevalence of nosocomial sinusitis in ICUs admitted patients in Rasool Hospital, Tehran, Iran

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Background: We studied the incidence rate of sinusitis in patients with fever of unknown origin (FUO) in ICUs.

Methods: A prospective, cross sectional study done in PICU and ICU in Rasool hospital; Tehran Iran (2007-2008). Paranasal sinus computed tomography was performed in all (adult) patients admitted in ICU within 48 h of admission and repeat thereafter (4-7 days) in adult cases with fever of unknown origin (FUO) after initial clinical and diagnostic screening. Infectious sinusitis was diagnosed by microbiological analysis of sinus fluid aspirates.

Results: 63 cases had full criteria and followed for nosocomial sinusitis (age = 1–86 years; mean 17 + 25). Acute bacterial nosocomial sinusitis proved in 82% (51/ 63), Allergic sinusitis 18% (n=12). Head trauma was the most common cause of admission in 45% (n=22) of cases. Positive cultures seen in 82% (45/51) of cases included: Staphylococcus Aureus, Streptococcus spp in 22% (n=9), gram negative organisms predominantly *Klebsiella*, *Pseudomonas* and acinetobacter species detected in 41% (n=19), mixed aerobic/anaerobic in 37% (n=17) of cases. 7 patients had

negative culture but positive smear or rapid antigen detection in sinus material included: *S. Pneumonia* in 5 children, Hemophilus influenza detected in 2 cases. Mean age of cases for nosocomial infection included: Gram negative organisms 7 years; Staph 14 year and mixed infection 27 years. We did not observe correlation between type of organisms and GCS; (P=0.3).

Conclusion: Physicians treating critically ill patients should be aware of the high risk of nosocomial sinusitis especially in cases with head trauma. Appropriate preventive measures, including the removal of nasogastric tubes in patients requiring long-term mechanical ventilation and routine investigation of FUO should include sinus CT scan should be linked to naso tracheal intubation, but its occurrence after orotracheal intubation is less clear.

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Aspects of needlestick injuries among medical students: Reported or not?

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Background: Medical students (MS) may be at high risk for needlestick injuries (NSI) and hence of transmission of blood borne pathogens including Hepatitis B (HBV), Hepatitis C (HCV) and HIV. Information is limited regarding the frequency of NSIs, the associated factors and the barriers to reporting them.

Methods: A self-administered anonymous questionnaire was distributed to 81 MS during an international students meeting on public health (ISMOPH). The questionnaire consisted of 21 questions covering topics including the frequency and reporting of NSIs as well as policy and post-exposure experiences. Completion of the survey was considered implied consent for study participation. The study served as a pre-test for an international cross-sectional multicentre study on NSIs among MS to evaluate the validity and feasibility of the developed survey questionnaire.

Results: A total of 32 MS completed the questionnaire giving a response rate of 40%. 25% (8/32) reported that they had at least one NSI during their studies and for 38% of respondents, that injury had involved a high-risk patient (defined as history of HBV, HCV and/ or HIV). 7 of the students reported that the injury was "self-induced" and described a feeling of being in "hurry" as the underlying cause. 50% (4/8) did not report the most recent NSI. The main reasons for under-reporting were due to an injury with a clean needle, little or no perception of risk as well as shame of having a NSI. 69% (22/32) reported that their facility has a clear policy regarding post-exposure follow-up of NSIs, whereas more than a third were not familiar with this policy. When 81 MS were