

Final Abstract Number: 54.019

Session: Infection Control, Nosocomial Infections & Critical Care

Date: Saturday, June 16, 2012

Time: 12:45-14:15

Room: Poster & Exhibition Area

Relationship between third-generation cepheims and isolation rate of Methicillin-Resistant *Staphylococcus aureus*: a retrospective observational studyH. Kato^{1,*}, A. Nakamura², S. Kodera², Y. Sato³¹ Tokyo Metropolitan Cancer and Infectious diseases Center Komagome Hospital, Bunkyo-ku, Tokyo, Japan² Asahi general hospital, Asahi, Japan³ Chiba University Hospital, Chiba, Japan

Background: Our study examined the relationship between the antibiotic use control and methicillin-resistant *Staphylococcus aureus* (MRSA) incidence at Asahi General Hospital (AGH). The isolation rate for MRSA at AGH peaked at 53% in 2004, consistent with a country-wide MRSA prevalence of about 65% in 2003. Prevalence at AGH has since declined steadily to less than 33% in 2009, after the institution of antibiotic use control.

Methods: We examined retrospectively 2317 MRSA patients and antibacterials in the whole hospital from April 2003 to September 2010 during three-month intervals. Univariate and multivariate analysis was performed to compare MRSA frequencies with consumption of multiple classes of antibacterials.

Results: Univariate analysis revealed that the appearance of MRSA patients positively correlated with the use of third-generation cepheims at a correlation coefficient (R) of 0.737 ($p < 0.01$), and negatively correlated with the use of second-generation cepheims ($R = -0.492$, $p < 0.01$) and penicillin ($R = -0.610$, $p < 0.01$). Multivariate analysis showed a correlation only with the use of third-generation cepheims ($R = 0.81$, $p < 0.01$). Further, univariate and multivariate analysis revealed that the detection of MRSA positively correlated with only the use of cefotaxime at an R value of 0.741 ($p < 0.01$), and 0.79 ($P < 0.01$).

Conclusion: Decreased use of the third-generation cepheims, especially cefotaxime, was associated with the reduced frequency of MRSA in patients at our hospital. Continuing decreases in the use of these drugs is expected to reduce the rate of isolation of MRSA in Japan.

<http://dx.doi.org/10.1016/j.ijid.2012.05.481>**Type: Poster Presentation**

Final Abstract Number: 54.020

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Surveillance of healthcare-associated infection at Angkor Hospital for Children, Siem Reap, CambodiaP.A. Khun^{1,*}, S. Seng¹, K. Emary², C. Moore², S. Soeng¹, C. Ngoun¹, V. Kumar¹, N. Day³, C. Parry², N. Stoesser²¹ Angkor Hospital for Children, Siem Reap, Cambodia² Mahidol Oxford Research Unit, Siem Reap, Cambodia³ Mahidol-Oxford Tropical Medicine Research Unit, Bangkok, Thailand

Background: Healthcare-associated infections (HAI) are a significant global threat. Surveillance data relating to HAI in the

lance of HAI in a regional paediatric hospital in northwestern Cambodia.

Methods: Standardised monthly cross-sectional HAI point prevalence surveys (PPS) were conducted at the Angkor Hospital for Children (AHC), Siem Reap. AHC is a 50-bedded hospital, with critical care, surgical and medical inpatients <16 years of age. Every child in the hospital was reviewed on a single day each month for evidence of an HAI. Patients at risk were those whose infection developed after 48 hours in hospital. In December 2011 we also screened for *Staphylococcus aureus* and multi-drug resistant Enterobacteriaceae carriage.

Results: Between January and December 2011 622 patients were surveyed. The median age was 2.7 years (range 0-16 years, IQR 0.5-9); ICU/ER patients were significantly younger in age ($p < 0.0001$). The number of patients at risk of HAI was greater in the intensive care (ICU), surgical (SU) and step-down care (LAU) settings ($p < 0.001$). The overall prevalence of HAI was 13.2/100 patients at risk (3.1 on the SU to 45.1 in the ICU/Emergency room (ER)). The relative risk of having an HAI in ICU/ER was 5.9. The mean HAI prevalence declined from 14.9/100 in the first six months to 11.5/100 in the second, although this was not significant ($p = 0.32$). The commonest HAI was of respiratory origin (37/64; 58%). 79% of patients were receiving an antimicrobial including ceftriaxone (21.4%), ampicillin (5%), gentamicin (5.1%), cloxacillin (4.6%) and imipenem (3.8%). Five patients were found to be carrying *S. aureus* (9.8%), one methicillin-resistant (1.9% overall carriage prevalence). 83% of patients had faecal carriage of ESBL-producing Enterobacteriaceae.

Conclusion: This is the first HAI surveillance data from Cambodia and confirms HAI as a major problem with respiratory HAIs most common. Rates of ESBL-carriage are alarming, possibly driven by high ceftriaxone usage. Current interventions include a hand hygiene programme, a VAP-prevention care bundle and the implementation of an antimicrobial guideline. This simple method of surveillance can be used to monitor future HAI trends in response to interventions.

<http://dx.doi.org/10.1016/j.ijid.2012.05.482>**Type: Poster Presentation**

Final Abstract Number: 54.021

Session: Infection Control, Nosocomial Infections & Critical Care

Date: Saturday, June 16, 2012

Time: 12:45-14:15

Room: Poster & Exhibition Area

Wound infection and skin consistency in aged patient with gastrectomy

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Background: Surgical site infection is one of the most important postoperative complications in aged patients with gastrointestinal surgery. Many pre and post operative conditions were listed of significant risk factors. The preoperative condition of the surgical site skin was not noticed as the risk factor of infection. In current report, we measured the skin consistency during the operation and evaluate the relationship between the consistency and wound infection in patients with gastrectomy.

Methods: A material has its own resonance frequency. If material touches an oscillated object, a shift of the resonance frequency