

To the Editors:

## Central vascular catheter-related blood stream infections: incidence, associated pathogens and antibiotic sensitivity patterns at a tertiary care hospital in Sri Lanka

Central vascular catheter related blood stream infections (CRBSIs) are defined as presence of bacteraemia originating from an intravascular device. CRBSIs cause a substantial amount of morbidity, mortality and increased hospital stay.

From February to November 2006, 100 central venous catheters (CVCs) were collected from patients admitted consecutively to the medical and surgical intensive care units (ICUs) of Colombo South Teaching Hospital (CSTH), who had temperature >38°C. Before removal of the venous catheter, two blood culture samples were collected, one through the central venous line and the other from a peripheral vein. Ethical committee approval and informed consent were obtained before collecting samples. Catheter tips were processed according to a quantitative technique known as the sonication method. The distal 4cm of the catheter tip was placed in brain heart infusion broth followed by sonication and then vortexing. The number of colony forming units (cfu) was determined by serial dilution. The threshold for a significant count was  $\geq 10^3$  cfu/ml. Blood cultures were processed according to guidelines issued by the College of Microbiologists of Sri Lanka. The organisms were then identified by routine microbiological techniques using API strips.

CRBSI was confirmed in 11%. Catheter colonization without bacteraemia was seen in 16% and there was no growth in 70% of catheters. In one sample (1%), the tip culture was negative while both blood cultures grew the same organism. Two (2%) samples grew different organisms from the catheter tip and peripheral blood cultures, representing bacteraemia not associated with intravascular catheters. Various rates of CRBSIs have been reported from studies done in many countries, ranging from 2% to 34% [1,2,3]. The rate of CRBSIs (11%) in the present study lies in between this range.

Pathogens responsible for CRBSIs in present study were *Klebsiella pneumoniae* and *Candida* species which were isolated in two patients each and coagulase-negative staphylococci, *Acinetobacter baumannii/calcoaceticus*, *Enterobacter cloacae*, *Brevundimonas vesicularis*, *Burkholderia cepacia*, *Chryseomonas luteola* and *Enterococcus* species in one patient each. Therefore, the majority

of aetiological agents were Gram-negative bacteria (64%), while Gram-positive bacteria and yeasts accounted for 18% each.

Studies have shown coagulase-negative *Staphylococci* as the predominant aetiological agent of CRBSI [4,5]. Use of povidone iodine for skin disinfection may be a reason for the rarity of Gram-positive organisms in our study.

Most of these organisms were resistant to the first line antibiotics and to some of the second line antibiotics. The isolate *A. baumannii/calcoaceticus* was a panresistant organism. The emergence of multi resistant pathogens in ICUs is high, due to the heavy usage of antibiotics for critically ill patients. This highlights a high rate of antibiotic resistance among hospital pathogens in Sri Lanka.

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