

P2603 Multidrug-resistant healthcare-associated Gram-negative bacteria infections: an increasing threat in a Nepalese intensive care unitShraddha Siwakoti*¹, Basudha Khanal¹, Asish Subedi²

¹ Department of Microbiology, B. P Koirala Institute of Health Sciences, University and hospital, Nepal, ² Department of Anaesthesiology and Critical care, B. P K oirala Institute of Health Sciences, University and hospital, Nepal

Background: There is an increasing trend of incidence of multi-drug resistant gram-negative (MDR-GNB) infection in intensive care units (ICU) world-wide. This healthcare-associated infection (HCAI) is associated with increased hospital costs and mortality. The purpose of our study was to determine the incidence rate of MDR-GNB, their spectrum, antibiotic susceptibilities and commonly involved beta lactamases drug resistance causing HCAI in ICU at a tertiary center from eastern Nepal.

Materials/methods: A prospective cohort study was conducted among adult patients admitted in ICU of B. P Koirala Institute of Health Sciences from July to December 2017. Clinical specimens from patients with suspected HCAI were processed with standard microbiological methods and patients with MDR-GNB were included. Antibiotic susceptibilities of the isolated strains were determined according to the clinical laboratory standard institute guidelines and beta-lactamases [extended-spectrum beta-lactamases (ESBL) and metallo-beta-lactamase (MBL)] were detected by various phenotypic tests.

Results: A total of 137 patients were admitted in the ICU during the study period, of which 61 developed 122 episodes of MDR-GNB HCAI with an incidence rate of 45 per 100 ICU admissions. Mean age of patients with MDR-GNB HCAI was 49.17±20.3 years. The most frequent diseases were hospital acquired pneumonia (72%, 88/122), blood stream infections (22%, 26/122), surgical site infections (3%, 4/122) and urinary tract infections (3%, 4/122). *Acinetobacter species* (41%, 50/122) was the most common followed by *Klebsiella pneumoniae* (28%, 34/122) and *Pseudomonas species* (25%, 20/122). High frequency of drug resistance [extensively drug resistant (XDR); 72% and MDR; 28%] along with production of beta-lactamases (MBL; 58% and ESBL; 25%) was observed among gram-negative bacterial isolates.

Conclusions: There is high incidence of MDR and XDR-GNB HCAI in our ICU. We recommend contact precaution for all MDR patients, strict implementation of infection control practices and stewardship of antibiotics to limit the spread of these MDR organisms. Continuous antimicrobial surveillance to monitor the incidence of MDR pathogens is needed in our ICU.

