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Clinical correlates and bacteriological characteristics of nosocomial *Acinetobacter* infection in the ICU of a tertiary care teaching hospital of central India

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This study was undertaken to determine the clinical correlates and bacteriological characteristics of *Acinetobacter* infection in the medical ICU of a tertiary care teaching hospital of central India, in order to improve its management by identifying the locally relevant predictors of this infection and to enable the early administration of empirical antibiotics according to institutional antibiogram. This cross-sectional study was conducted over six months on patients admitted to our ICU for >48 hours, without any evidence of *Acinetobacter* infection in baseline culture samples. Clinical details of recruited patients, results of their routine investigations, APACHE-II and CPIS scores were recorded. Bacteriological culture of appropriate samples was performed, whenever indicated, and the clinical significance of the isolates was determined according to CDC/NHSN criteria. Environmental sampling was performed fortnightly according to hospital surveillance policy. Clinical and environmental *Acinetobacter* isolates were studied for biofilm-formation, antibiotic susceptibility, carbapenemase production and presence of OXA51, NDM and IMP genes. A total of 65 patients (41 males), with a mean (\pm SD) age of 43 (\pm 15) years were recruited. The patients belonged to three groups, viz. Group-1 comprising of patients with *Acinetobacter* infection (n=9), Group-2 including patients with other infections (n=19) and Group-3 consisting of patients with no infection (n=37). Significant risk factors for *Acinetobacter* infection included higher CPIS (p=0.03) score, longer length of ICU stay (p=0.05) and intubation (p=0.001). Compared to non-infected patients, those with *Acinetobacter* infection had higher SOFA (p=0.004) and APACHE II (p=0.015) scores. The mean (\pm SD) duration to onset of *Acinetobacter* infection was 15(\pm 10) days. Of 12 *Acinetobacter* isolates, six were recovered from tracheal aspirate. Strong biofilm formation was observed in four of 12 clinical isolates and three of five environmental isolates. While all isolates showed resistance to 3rd generation cephalosporins and piperacillin-tazobactam, 69.3% were resistant to carbapenems. Resistance to polymyxin B/colistin was not observed. All isolates showed presence of OXA51 gene. NDM gene was observed in one environmental and four clinical isolates.

Biography

Upasana Mohanty is a Medical Graduate. She is currently pursuing her Specialization in Microbiology from All India Institute of Medical Sciences Bhopal, India.

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