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INCIDENCE AND CLINICAL OUTCOMES OF GRAM-NEGATIVE BACTERIAL RESPIRATORY INFECTIONS IN THE INTENSIVE CARE UNIT OF A TERTIARY CARE HOSPITAL - A PROSPECTIVE COHORT STUDY

Meghana .

Abstract

Background and Objectives: Healthcare-associated infections (HAI) is the infection that patients acquire when they are admitted to a hospital or other healthcare facilities. The prevalence of specific MDR bacteria causing hospital-acquired pneumonia (HAP) can change according to hospital, total patients, antibiotics exposure, and type of ICU patient. This prevalence keeps changing with time, highlighting the need for well-timed, local surveillance data. Thus, we aimed to estimate the incidence of gram-negative bacterial respiratory infection in the ICU and to determine the clinical outcomes of the patients.

Methods: A single centre, cross-sectional cohort study was carried out in the intensive care units of a tertiary care hospital in south India. Endotracheal aspirates were collected as per physicians' orders and informed consent was taken prior to the enrolment into the study. Lab reports and a structured proforma were used for the retrieval and documentation of data. All the identified Gram-negative bacterial (GNB) respiratory infections were then classified according to sensitivity and resistance as MDR, PDR, XDR, and sensitive gram-negative bacteria.

Results: 102 patients had growth of gram-negative bacteria in their endotracheal aspirate culture. The incidence of gram-negative bacteria was 24.4%. Acinetobacter baumannii was the predominant specie followed by Klebsiella pneumonia and E. coli. Among MDR and non-MDR groups, the duration of stay in ICU, duration the patient is on mechanical ventilation, duration on the endotracheal tube and mortality rate are higher in patients infected with MDR pathogen.

Interpretation and conclusion: An increasing trend in antibiotic resistance especially carbapenem resistance is alarming and increased ICU stay and mechanical ventilation days were noticed in MDR-GNB. Hence, monitoring of resistance patterns and regular surveillance data of pathogens in the ICU can reduce mortality and morbidity associated with GNB.