

Study of Metallo-beta lactamase production in imipenem-resistant gram-negative bacteria in surgery and ICUs in tertiary care hospital.

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Abstract:

Broad spectrum antimicrobial resistance, where resistance to multiple, or even all available antibiotic classes, is a key global healthcare problem. Gram negative bacilli account for the majority of bacterial pathogens isolated from clinical specimens. The incidence of infections is due to gram negative bacilli resistant to β lactam agents. Metallo beta lactamase (MBL) producing gram negative bacteria have been recognized to be among the most important nosocomial pathogens. MBLs have been identified with increasing frequency to cause serious infections. **Aim:** This study was conducted to identify phenotypically for the presence of metallo-beta lactamase producing isolates in surgery and ICUs. **Materials and Methods:** A total of 134 imipenem resistant microorganisms were isolated in Surgery and various ICUs. All the isolates were tested for anti-microbial susceptibility (Hi-Media Mumbai) for Imipenem by Kirby-Bauer disk diffusion method on Muller-Hinton agar. Imipenem resistant isolates were further tested for Metallo-beta lactamase production by Combined disc diffusion test. **Results:** Out of 134 isolates, 67 (50%) were *Klebsiella spp.*, 26(19.4%) *E.coli*, 33 (24.6%) *Pseudomonas spp.*, 8(5.9%) were *Acinetobacter spp.* 77 isolates shows MBL production. Among 77 MBL producing isolates *Klebsiella spp.* comprised of 40/77 (51.9%), *Pseudomonas spp.* 21/77(27.2%), *E.coli*11/77(14.2%), *Acinetobacter spp.* 5/77(6.4%). Out of 77 MBL producers, 31 were isolated from ICUs and 46 were from Surgical ward. **Conclusion** The detection of MBL resistant organism showed importance of hospital environment in the ICUs and surgical wards are vicious due to their invasive procedures and enormous usage of antibiotics.

Keywords: - Imipenam, Metallo-beta-lactamase, Microorganisms.

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