

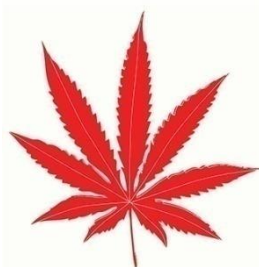


Conference Abstract
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Conference Abstract

DETECTION OF CARBAPENEM RESISTANT KLEBSIELLA SPECIES ISOLATED FROM CLINICAL SAMPLES

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ABSTRACT

Background: The dissemination of carbapenem resistance among the family of Enterobacteriaceae is one of the most potent intimidation to an individual's health nowadays. In this research, the foremost focus is on carbapenemase-producing Klebsiella species. Carbapenems are a genre of beta-lactam ring containing antibiotics and include, Meropenem, Imipenem, Ertapenem, Biapenem, Doripenem & Panipenem. Carbapenems are highly effective antibiotics as they arrest the cell wall of bacteria by attaching to penicillin-binding proteins which leads to the inactivation of autolytic enzymes in the cell wall and inhibition of bacteria. So, if the resistance against carbapenem emerges then it will subsequently lead to narrow therapeutic options. The foremost purpose of this research is the determination of carbapenem resistance among Klebsiella species.

Methodology: Ten (n=10) isolates of Klebsiella species were collected from Centralized Laboratory of Karachi, Pakistan. All the samples were sub-cultured on EMB (eosin methylene blue) agar to differentiate them from other Enterobacteriaceae and MacConkey agar to check lactose fermentation. Gram staining was done for morphological identification and capsule staining for further confirmation, biochemical tests (IMViC, TSI) were carried out to differentiate Klebsiella species. Carbapenem resistance against Imipenem and Meropenem was identified by the disc diffusion method based on CLSI guidelines.

RESULTS & Conclusion: All ten isolates gave lactose fermenting pink colonies on MacConkey agar and pink to purple colonies on EMB agar. They appeared as gram -ve large rods in gram staining. Biochemical tests were positive for Voges Proskauer, citrate, nitrate, gas production, lactose, sucrose and glucose fermentation. Indole, methyl red test and H₂S production were negative confirming K. pneumoniae. Antibiotic susceptibility test was performed by Kirby Bauer disc diffusion method. In this research the main focus was on carbapenems (Imipenem and Meropenem). Results showed that K. pneumoniae were highly resistant to Meropenem as compared to Imipenem. All ten isolates of K. pneumoniae were



resistant to Meropenem while only two isolates of *K. pneumoniae* were resistant to Imipenem and the rest were sensitive to Imipenem.

Keywords: *Klebsiella pneumoniae*, Resistance, Carbapenem, Beta-lactams