Title: Prevalence of multiple β-lactamases produced by Klebsiella pneumoniae clinical isolates from hospitalized patient in kerman, Iran.

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Abstract: Background and objective: Beta-lactamases are widely distributed among the Enterobacteriaceae, predominantly in Klebsiella pneumonia. Klebsiella pneumoniae is a major cause of nosocomial infections and other opportunistic infections. Emergence of antibacterial resistance and production of β-lactamases are responsible for the frequently observed empirical therapy failures. ESBLs(Extended spectrum β-lactamases), MBLs(Metallo- β-lactamases) and AmpC β-lactamases producing bacteria are serious threat in treating bacterial infections. The aim of this study was to determine the presence and the prevalence of ESBLs, MBLs and AmpC β-lactamases producing in clinical isolates of Klebsiella pneumoniae in Kerman.

Materials and methods: Agar dilution method was used to determine the minimum inhibitory concentration of cefotaxime, ceftazidime and ceftizoxime in 75 Klebsiella pneumoniae isolates. Resistance to imipenem, cefepime and cefoxitin was determined by disk diffusion method. Phenotypes of ESBLs , MBLs and AmpC β-lactamases were also determined by combined disk method.

Results: From 75 Klebsiella pneumoniae isolates 41.4% produced ESBLs, 16% produced AmpC β-lactamases and 1.4% produced MBLs by phenotypic method. Simultaneous production of ESBLs, MBLs and AmpC β-lactamases was observed in16% of isolates.

Conclusion: Beta-lactam therapy can fail when hyper-producing β-lactamases organisms become present in an infection. Outbreak of isolates co-expressing ESBLs , MBLs and AmpC-β-lactamases can cause serious problems in future regarding the treatment of infections caused by these common enteric pathogens.

Keywords: Antibiotic resistance, ESBLs , MBLs, AmpC-β-lactamases., Klebsiella pneumoniae

Presentation: Poster