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STUDY CORRELATION BETWEEN KPC CLINICAL ISOLATES AND VIRULENCE

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K*lebsiella pneumonia* is one of the most common bacteria causing pneumonia, especially in hospitals. The incidence of carbapenem-resistant *klebsiella pneumoniae* carbapenemases (KPC) strains are in increasing manner. Even the multi-drug resistance strains evolution increasing, the virulence of them are under question. In this study, we are aiming to study the relationship between KPC strains and virulence in pneumonia infection. Three KPC clinical isolates and one multi-drug resistant non-KPC strain were included in this study. KPC strains were confirmed to contain plasmid having bla KPC gene. When ICR mice infected with different KPC strains, mice were apparently healthy and didn't show any mortality during 21 days of monitoring while Non-KPC strain showed ~90% mortality within two days of infection in all inocula used. Infecting neutropenic mice (induced by cyclophosphamide 200 mg/Kg and cortisone acetate 250 mg/Kg at day -2, +3, and +8 relative to infection) with KPC strains using higher inocula were carried out to confirm lower virulence of KPC strains, in which the mice start to die after day +3 relative

to infection. Screening of all the strains for eight virulent capsular genes which associated mostly with pathogenesis and invasion was done. It showed that virulent Non-KPC strain has a highly virulent gene *wcaG* which encodes capsular fucose synthesis, and enhance the ability of the bacteria to evade phagocytosis by macrophages. While the KPC strains didn't include any of these capsular virulent genes. *Klebsiella* isolates having KPC plasmid process low virulence than non-KPC strains in pneumonia infection.

Biography

Eman G Youssef is a PhD student at Beni-Suef University. She is a Teaching Assistant at Department of Biotechnology, Faculty of Postgraduate Studies for Advanced Sciences, Beni-Suef University. She performed her PhD research at Harbour UCLA, CA as a non-degree program for one year funded by Fulbright. She is interested in discovering new vaccines and to study about the microbial pathogenesis and immune responses.

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