ISOLATION AND IDENTIFICATION OF NEW DELHI METALLO-
BETA LACTAMASE-1 GENE PRODUCING
ENTEROBACTERIACEAE AMONG CLINICAL ISOLATES IN
TIRUNELVELI MEDICAL COLLEGE

Abstract:

BACKGROUND: New Delhi metallo beta lactamase-1 producing superbugs create a global threat because they can hydrolyze and inactivate carbapenems, which are considered as the final resort antibiotics for the treatment of multi drug resistant bacterial infections. Infections due to these organisms are difficult to treat because of their limited therapeutic options. They also posses high morbidity, mortality and very high potential for global dissemination.

Objective: To assess the production of NDM-1 type metallo beta lactamase enzyme in Enterobacteriaceae among clinical isolates.

Results and conclusion: 2514 samples of infective foci (pus, urine, blood, catheter tips, culture swabs) were screened from December 2015 to August 2016, in Tirunelveli Medical college. Among 2514 samples, 425 isolates were Enterobacteriaceae and 195 out of this 425 isolates were multidrug resistant. 48 (28.4%) among 425 isolates were resistant to Ertapenem and 45 isolates (93.75%) from ertapenem resistant samples were blaNDM-1 positive, detected by Multiplex PCR. In our study, isolates from wound infection and urinary tract infection were the major contributors for blaNDM-1. Majority of the organisms were Klebsiella species (71.15%) and E.coli(15.6%).
Our findings suggest that, there is a need for a proper surveillance to detect blaNDM-1 producing bacterial species and to avoid irrational use antibiotics to prevent its spread.

Keywords: New Delhi Metallo beta lactamases, Ertapenem, Cabapenem, Enterobacteriaceae