



## ABSTRACT

*P. aeruginosa* is an opportunistic pathogen and can easily be isolated from different sample sources. It exhibits the multidrug resistance and poses a challenge in treatment of the diseases. The aim of present study is to determine the percentage of imipenem resistant *P. aeruginosa* (IRPA), metallo- $\beta$ -lactamase (MBL) production and *bla*<sub>IMP</sub> gene detection. We have collected, 200 samples having *P. aeruginosa* infection either single microbial or polymicrobial. Pus samples, containing *P. aeruginosa*, were found to be the most frequent as compared to the samples taken from wound swab, sputum, urine, blood and different body fluids. These *P. aeruginosa* isolates were subjected to antimicrobial testing. Overall 28% (n =56) *P. aeruginosa* isolates were resistant to imipenem known as imipenem resistant *P. aeruginosa* (IRPA). All IRPA isolates were also found to be multidrug resistant. Tazocin (tazobactam/ piperacillin) (75%) and sulzone (sulbactam/ cefoperazone) (37.5%) were found to be the most effective antimicrobials against IRPA. Among all IRPA isolates 87.5% (n=49) were found to be MBL producers, detected by Imipenem-EDTA disc diffusion method. These MBL positive isolates of *P. aeruginosa* were confirmed by ribotyping. These confirmed isolates of *P. aeruginosa* were subjected for *bla*<sub>IMP</sub> gene detection by PCR and 1% agarose gel electrophoresis. No *bla*<sub>IMP</sub> gene was detected in all these MBL positive isolates of *P. aeruginosa*. It was concluded that *bla*<sub>IMP</sub> gene is not present in our hospital settings and reason of imipenem resistance may be the OprD deficiency or the production of any other type of MBL gene.