Abstract: background and objectives: Pseudomonas aeruginosa is a problematic nosocomial pathogen since it can cause complicated infection in immunocompromised and critically ill patients. Carbapenem is a chemical widely used in consumer products as an anti-Pseudomonas agent. Studies have shown that some species of P. aeruginosa are resistant to carbapenem and cause increasing of morbidity and mortality. This study was designed to evaluate drug susceptibility and broad spectrum β-lactamase and carbapenemase producing P. aeruginosa isolated in burn patients, Tehran, Iran.

Materials and methods: One hundred and five clinical P. aeruginosa isolates were collected during 11 months. P. aeruginosa isolates were analyzed for antibiotic susceptibility with Kirby – Bauer disk diffusion method using interpretative guidelines of CLSI. All imipenem – resistant isolates were screened for ESBL and metallo-β-lactamase production by double disk assay and EDTA disk method, respectively.

Results: Drug susceptibility tests were shown high resistance for tazobactam+piperacillin (55%), piperacilin (60%), cefepime (86%), meropenem (68%), cefotaxime (61%), imipenem (68%), ticarcillin (84%), gentamicin (83%), amikacin (71%), kanamycin (98%), tobramycin (95%), ceftazidime (75%) and ciprofloxacin (55%); furthermore, low resistance for colistin (10%) . We observed ESBL and carbapenemase production in 25.75% and 20% isolates, respectively.

Conclusion: In conclusion, our results show that extreme consumption of carbapenem group and false detection of bacterial resistance lead to emergence of ESBL and imipenemase producing isolates. Then, use of some antimicrobial agents must be restricted due to existence of high resistance and using of combined effective antibiotics is recommend.

Pseudomonas aeruginosa, ESBL, burns, drug susceptibility, carbapenemase, β-lactamase, imipenemase.

Presentation: Poster