Immunome Res 2018,Volume:14
DOI: 10.4172/1745-7580-C3-021

Study of imipenem/cilastatin resistance among hospitalized patients in Sana'a, Yemen

Ali Alkaf
Sana'a University, Yemen

Background: Carbapenems are considered as the most effective drugs against most pathogens. Imipenem/cilastatin is the most marketed carbapenem in Yemen. Carbapenem resistance is a major and an on-going public health problem globally. It occurs mainly among Gram-negative bacteria.

Objectives: The present study was designed to determine the prevalence of imipenem/cilastatin resistance among hospitalized patients at a local hospital in Sana'a, Yemen.

Methods: The study was performed at a local hospital in Sana'a, Yemen. The records were taken from the Microbiology Department for hospitalized patients. Imipenem/cilastatin susceptibility samples were collected from August, 2017 to May, 2018. The imipenem/cilastatin susceptibility was studied against several pathogens.

Results: Out of 863 study samples, 541 (62.7%) were imipenem/cilastatin sensitive isolates and only 25.5% of samples were resistant. The *Escherichia coli* isolates were observed in 24.7% of samples, followed by Acinetobacter species (17.4%). Thirty-seven and five tenths percent of total imipenem/cilastatin sensitive isolates (541) were Escherichia coli. In addition, 95.3% (203/213) of *Escherichia coli* isolates were imipenem/cilastatin sensitive. However, the Acinetobacter species had higher imipenem/cilastatin resistance than other pathogens (60.45%). Moreover, 88.7% (133/150) of Acinetobacter species isolates were imipenem/cilastatin resistant. Eighty-one and three tenths percent (65/80) of Klebsiella pneumoniae isolates were imipenem/cilastatin sensitive and 33.7% (32/96) of Pseudomonas aeruginosa were imipenem/cilastatin resistant. In the present study, 31.1% (n=168/541) of imipenem/cilastatin sensitive isolates were from blood cultures, followed by sputum cultures (22.6%; 122/541). However, 65.5% (144/220) of sputum culture isolates were imipenem/cilastatin resistant.

Conclusion: Imipenem/cilastatin resistance of multidrug-resistant bacteria is slowly increasing in Yemen and possesses a significant challenge to public health. Surveillance to closely monitor trends as well as infection control and antibiotic stewardship activities are necessary to preserve treatment options. A more careful monitoring for use of broad-spectrum antibiotics should be instituted.