Frequency and antimicrobial resistance pattern among bacterial clinical isolates recovered from different specimens in Egypt

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Abstract

Antimicrobial resistance (AMR) is a global public health threat resulting in high mortality rates. Current study
aimed to identify the most prevalent pathogens among variable infection sites and their AMR pattern. Data concerning cultures
and antibiotic susceptibilities were retrieved from Microbiology Departmentôs records and statistically analyzed. Out of 554
bacterial isolates, Gram negative isolates (68.4%) were predominant. Urine specimens showed the highest incidence of
recovery of total isolates (41.5%, n=230) followed by blood (23.1%, n=128), while sputum specimens exhibited the least
frequency (17%, n=94). E. coli (30.7%, n=170), S. aureus (21.1%, n=117) and Klebsiella spp (20.9%, n=116) were the most
frequently isolated pathogens. Recovery of isolates was significantly more frequent among males (P<0.05) except in case of
urine specimens. Highest incidence of resistance in both Gram positive and Gram negative isolates was recorded in case of
cephalosporins and penicillin/ɓ-lactamase. Gram positive isolates exhibited the least resistance to linezolid (10.8%) and
vancomycin (9.5%) whereas colistin was the most effective against Gram negative isolates as it recorded 16.4% resistance.
Higher frequency of multiple drug resistance (MDR) was also observed in Gram negative isolates compared to Gram positive
ones. Resistance to uropathogens and MDR were significantly more frequent in males. Although E. coli was the most prevalent
uropathogen but it showed the least incidence of MDR however Pseudomonas spp exhibited the highest MDR rate. The high
incidence of resistance in the current study is alarming and highlights the necessity of routinely monitoring the local
prevalence of resistance for selecting the best antimicrobial treatment and as a guide for empirical therapy.

Central African Journal of Public Health 2019, January