EV0527

RESISTANCE PHENOTYPES AND SUSCEPTIBILITY OF CONTEMPORARY *SERRATIA* ISOLATES IN A UNIVERSITY HOSPITAL IN CRETE, GREECE

G. Samonis,[1] KZ. Vardakas,[2,3] S. Maraki,[4] P. Stamouli,[5] VE. Mavromanolaki,[6] D.P. Kofteridis,[1] ME. Falagas[2,3,7]

[1] Department of Internal Medicine, University of Crete Medical School, Heraklion, Greece, [2] Alfa Institute of Biomedical Sciences (AIBS), Athens, Greece, [3] Department of Internal Medicine Infectious Diseases, Iaso General Hospital, Iaso Group, Athens, Greece , [4] Department of Clinical Microbiology, University Hospital of Heraklion, Crete, Greece, [5]Department of Applied Mathematics and Physics, National Technical University of Athens, Athens, Greece, [6] University of Crete Medical School, [7] Department of Medicine, Tufts University School of Medicine, Boston, MA, USA

BACKGROUND

Serratia spp. account for a significant proportion of Gram negative hospital and community-acquired infections. The emergence of multidrug resistant (MDR) strains intensified the interest in *Serratia* spp. infections. In this study we evaluated the activity of several antibiotics against clinical isolates of *Serratia* spp., resistance rates in time and phenotypic mechanisms of resistance.

METHODS

Serratia isolates from outpatients and inpatients at the University Hospital of Heraklion, Crete, Greece during a six year period (2010-2015) were included in the study. Non-duplicate isolates from intensive care unit (ICU) and non-ICU patients were studied using automated systems (Advanced Expert System in conjunction with the VITEK 2). Phenotypic confirmatory tests were applied for detection of extended-spectrum β-lactamases (ESBLs), AmpCs and carbapenemases.

RESULTS

A total of 378 *Serratia* isolates were analyzed, with *S. marcescens* being the predominant species (88.3%). Fluoroquinolones (97.9%), carbapenems (97.4%) and fosfo-mycin (97.4%) were the most active followed by amikacin (95.5%), piperacillin/tazobactam (94.7%), and cotrimoxazole (94.4%) (Table 1). MDR strains were less susceptible to a number of antibiotics. Changes in the susceptibility rate were observed within years depending on the distribution of MDR strains, without specific trend towards decreasing susceptibility.ESBL (7.9%, 29/30 MDR,all resistant to aztreonam and cephalosporins), carbapenemase (2.9%,7KPC and 4 MBL), AmpC (2.1%) and aminoglycoside modifying enzyme (10.6%, AAC(3)-II in 24 isolates) production were the com-monest resistant phenotypes.

Table 1. Susceptibility to antimicrobial agents and MICs for selected antimicrobial agents for 378 *Serratia* spp. clinical isolates (2010-2015).

Antibiotic	MIC range (mg/L)	MIC_{50} (mg/L)	MIC_{90} (mg/L)	% susceptible	% resistant
ticarcillin				83.3	16.7
ticarcillin/ clavulanate				85.2	14.3
piperacillin				84.4	14.8
piperacillin/ tazobactam	≤4 - >128	≤4	16	94.7	4.8
cefoxitin	≤4 - >64	16	>64	45.2	22.0
cefotaxime				87.0	13.0
ceftriaxone	≤1 - >64	≤1	8	87.0	13.0
ceftazidime				87.0	13.0
cefepime				88.6	11.4
imipenem	≤0,25 - >16	1	1	97.1	2.9
meropenem				97.4	2.6
aztreonam	≤1 - >64	≤1	16	86.8	13.2
nalidixic acid				95.2	4.8
ciprofloxacin	≤0,25 - >4	≤0,25	≤0,25	97.9	1.6
ofloxacin				97.9	1.3
levofloxacin				97.9	1.6
moxifloxacin				97.6	1.6
tobramycin				85.4	11.9
amikacin	≤1 - >64	2	16	95.5	3.4
gentamicin	≤1 - >16	≤1	4	91.3	7.7
tetracycline				43.9	42.9
tigecycline	≤0,5 - >8	2	4	87.3	2.4
trimethoprim/ sulfamethoxazole	≤2 - >4	≤2	≤2	94.4	5.6
chloramphenicol				75.4	9.8
fosfomycin	4 - >1024	8	16	97.4	1.6

CONCLUSION

Susceptibility of *Serratia* spp. varied during the study period without evidence of a continuous decline.

27th ECCMID, 22-25 April 2017, Vienna, Austria