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Paper Poster Session III

MRSA - still there and threatening

MRSA is associated with increased overall mortality in patients with diabetic foot osteomyelitis

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Objectives: Diabetic foot osteomyelitis (DFO) may be caused by MDR microorganisms (MDRO) and DFO was associated with an high incidence of mortality. To understand if different microorganisms and MDRO are predictors of mortality in these kind of patients we analyzed retrospectively our microbiology database to find patients with DFO cared at Pisa Hospital, Italy, reference centre for diabetic foot in Tuscany, from 2001 to 2013.

Methods: These characteristics were studied: 1) MRSA vs MSSA; 2) Ciprofloxacin resistant *P. aeruginosa* (CiproRPA) vs Cipro susceptible *P. aeruginosa* (CiproSPA); 3) Carbapenem resistant *P. aeruginosa* (CRPA) vs Carbapenem susceptible *P. aeruginosa* (CSPA); 4) Ciprofloxacin resistant enterobacteria (CiproRE) vs Ciprofloxacin susceptible enterobacteria (CiproSE); 5) ESBL producers enterobacteria (ESBL+) vs non ESBL producers enterobacteria (ESBL -); 6) *Candida parapsilosis* (CP) vs *Candida non parapsilosis* (CNP). Microbiology and presence of polymorphonuclear leukocytes (PMN) at Gram stain of DFO was recorded. Clinical characteristics studied were: overall mortality, time to healing (TH) of DFO, omolateral and controlateral relapse and time free of DF infection.

Statistical analysis was performed using non parametric Mann-Whitney test.

Results: 401 patients with DFO were found. From bone specimens analyzed in microbiology laboratory were recovered 625 isolates. Redundant isolates were eliminated.

S. aureus was found in 139 DFO (76 MRSA), (Enterobacteria in 116 DFO Cipro R 45, ESBL + 34); *Pseudomonas aeruginosa* in 95 DFO (53 CiproR, 32 CRPA); Yeasts in 32.

DFO caused by MRSA with respect to DFO caused by MSSA was associated with increased overall mortality ($p= 0.005$) and increased TH ($p= 0.024$). Presence of PMN with respect with absence of PMN was associated with increased overall mortality ($p= 0.008$), increased TH ($p= 0.026$).

The other characteristics were not associated with significant differences in patients' outcomes. Although a trend towards an increased TH was found for CiproRE vs CiproSE ($p= 0.07$) and for CP vs CNP ($p= 0.095$).

Conclusion: MRSA and presence of PMN at gram stain of bone obtained from DFO was associated with increased overall mortality and TH in diabetic patients with DFO.