A88 - Ventilator-associated pneumonia due to multidrug-resistant Klebsiella spp.: antibacterial resistance and predictors of ICU mortality

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Introduction:
The aim of the study was to evaluate the antibacterial resistance of multidrug-resistant (MDR) Klebsiella spp. isolates as pathogens of ventilator-associated pneumonia (VAP) and to determine predictors of ICU mortality.

Methods:
Retrospective data analysis of patients (pt) treated in ICU with MDR Klebsiella spp. strains as pathogens of VAP during three years period was carried out.

Results:
Data of 71 pt were evaluated. All tested strains of MDR Klebsiella spp. were resistant to ampicillin, piperacillin, ceftroxime. Resistance to amoxicillin/clavulanate was 35/36 (97.2%), ampicillin/sulbactam and cefotaxime 70/71 (98.6%), piperacillin/tazobactam 43/71 (60.6%), meropenem and imipenem 0/71 (0%), ertapenem 2/30 (6.7%), amikacin 4/59 (6.8%), gentamicin 40/71 (56.3%), ciprofloxacin 51/68 (75.0%), cefoperazone/sulbactam 14/45 (31.1%). The ICU mortality was 26/71 (36.6%). Statistical significant differences of survivors vs non-survivors were found in median of neutrophilosis on diagnosis day 80.9% (IQR 72.6-83.6) vs 87.5% (IQR 81.4-97) p < 0.001, and between proportions of septic shock on diagnosis day 10 (22.2%) vs 14 (53.8%), p = 0.007, renal failure 20 (44.4%) vs 21 (80.8%), p = 0.003, renal replacement therapy (RRT) 4 (8.9%) vs 10 (38.5%), p = 0.003, Charlson Comorbidity Index ≥ 5 – 15 (33%) vs 15 (57.7%), p = 0.045, cardiovascular 28 (62.2%) vs 25 (96.2%), p = 0.002, kidney 4 (8.9%) vs 9 (34.6%), p = 0.007 and autoimmune 0 (0%) vs 5 (19.2%), p = 0.005 disease. Odds ratio (OR) for ICU mortality for RRT was OR 4.64 (95% CI 1.16-18.62), for septic shock OR 4.01 (95% CI 1.17-13.67), and for neutrophilosis OR 1.16 (95% CI 1.05-1.28).

Conclusion:
VAP due to MDR Klebsiella spp. was associated with the high rate of antibacterial resistance to aminopenicillins, 3rd generation of cephalosporins, fluoroquinolons, aminoglycosides, but carbapenems. The ICU mortality was 36.6%. The RRT, septic shock and neutrophilosis on diagnosis were predictors for ICU mortality in patients with VAP due to MDR Klebsiella spp.