

P1814 Treatment pattern and outcome in patients with infection due to pandrug-resistant bacteria

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Background: Infection due to pan-drug resistant (PDR) pathogens is an emerging healthcare problem. However, limited data exist on the treatment pattern and outcome of patients with PDR infection. The aim of the study was to investigate clinical course, treatment pattern, prognostic factors, and outcome in a consecutive cohort of patients with a uniform definition of PDR infection.

Materials/methods: This was a retrospective single-center cohort study including consecutive eligible patients with a PDR infection hospitalized at the University Hospital of Heraklion, Crete, Greece between 2010 and 2018. Isolates were classified as PDR in case of non-susceptibility to all agents in all antimicrobial categories. Primary outcome of interest was the in-hospital infection-related mortality.

Results: In total, 65 patients with infection due to PDR pathogen were identified. The median age was 64 years old (interquartile range, IQR: 45.5-74.5) and the median Charlson comorbidity index 3.0 (IQR: 1.0-5.75). Of the 65 PDR isolates, 31 (48%) were *Klebsiella pneumoniae*, 28 (43%) were *Acinetobacter baumannii*, and 6 (9%) were *Pseudomonas aeruginosa*. The PDR bacteria were more frequently isolated from bronchial secretions/sputum (32; 49%) blood (14; 22%), and urine (10;15%). The most common empirical therapy was colistin combination (n= 32; 49%), followed by non-colistin, non-tigecycline combination (n=25; 39%), and carbapenemes + tigecycline (n=8; 12%). The empirical therapy was effective in 50%, 37.5%, and 8% of patients received colistin combination, carbapenemes – tigecycline, and non-colistin, non-tigecycline combination, respectively (p-value = 0.003). The infection-related in-hospital mortality for the whole cohort was 32% (95% Confidence Interval, CI: 22-45%). Three factors were significantly associated with infection-related in-hospital mortality in multivariate analysis: Charlson comorbidity index (Odds Ratio, OR: 1.5, 95% CI: 1.0-2.3, p-value = 0.030), prior steroid use (OR: 4.1, 95% CI: 1.0-17.0, p-value = 0.049), and empirical treatment strategy with non-colistin, non-tigecycline combination (OR: 7.5; 95% CI: 1.7-32.8, p-value = 0.008).

Conclusion: Infections due to PDR pathogens are associated with considerable mortality but not as high as expected given the lack of *in vitro* antibiotic susceptibility to all antibiotics. Our results support the use of colistin and/or tigecycline combination as empirical therapy when infection due to gram-negative PDR pathogens is suspected.