Antibiotic Therapy and Clinical Outcomes of *Pseudomonas Aeruginosa* (PA) Bacteraemia

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Abstract

**Introduction:** *Pseudomonas aeruginosa* (PA) bacteraemia is associated with high morbidity and mortality. We assessed clinical outcomes in patients with PA bacteraemia treated with piperacillin-tazobactam (TZP) versus other antibiotics, and monotherapy versus combination, all with proven activity by disc testing without minimum inhibitory concentration (MIC) data. **Materials and Methods:** All patients with PA bacteraemia in 2007 to 2008 were reviewed for demographic, comorbidity, clinical, laboratory, treatment and outcome data. Primary outcome was 30-day mortality. Secondary outcomes included microbiological clearance, clinical response and length of stay (LOS). **Results:** Median age for 91 patients was 65 years. Median Simplified Acute Physiology Score (SAPS) II score was 30. Monotherapy was used in 77 cases: 42 on ceftazidime, 17 on TZP, 10 on carbapenems, and 8 on other antipseudomonal antibiotics. The 30-day mortality was 20.9%, and similar between ceftazidime and TZP versus other antibiotics respectively. More patients in combination versus monotherapy group had cardiovascular diseases, diabetes mellitus and vascular access as source of bacteraemia. Patients on monotherapy had higher 30-day mortality (24.7% vs 0%, *P* = 0.037). Multivariate analysis identified SAPS II score (OR = 1.097, 95% CI, 1.032 to 1.166, *P* = 0.003) and cancer (OR = 4.873, 95% CI, 1.235 to 19.223, *P* = 0.024) as independent predictors of 30-day mortality. **Conclusion:** TZP appeared to be an effective culture-guided antibiotic for PA bacteraemia. High 30-day mortality in monotherapy might be confounded by comorbidity, illness severity and sample size. Cancer patients and a high SAPS II score were independent predictors of 30-day mortality.

**Key words:** Bloodstream infections, Mortality

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