Safety and Effectiveness of Improving Carbapenem Use via Prospective Review and Feedback in a Multidisciplinary Antimicrobial Stewardship Programme

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Abstract

Introduction: Antimicrobial stewardship programmes (ASP) can reduce antibiotic use but patient safety concerns exist. We evaluated the safety of prospective carbapenem review and feedback and its impact on carbapenem use and patient outcomes. Materials and Methods: After 3 months implementation of our ASP, we compared patients with and without acceptance of ASP recommendations on the use of carbapenems. Primary outcome was 30-day mortality. Secondary outcomes included duration of carbapenem use, length of hospitalisation, clinical response, microbiological clearance, 30-day re-admission and mortality at discharge. Results: Of 226 recommendations for 183 patients, 59.3% was accepted. De-escalation, switching to oral antibiotics and antibiotic cessation comprised 72% of recommendations. Patients with acceptance of ASP recommendations had lower 30-day mortality and higher end-of-therapy clinical response despite shorter carbapenem duration (P < 0.05). Predictors of 30-day mortality were Pitt bacteraemia score (adjusted odds ratio [aOR] 1.39, 95% confidence interval [CI], 1.11 to 1.74; P = 0.004) and non-acceptance of ASP recommendations (aOR 2.84, 95% CI, 1.21 to 6.64; P = 0.016). Conclusion: Our prospective carbapenem review and feedback mainly comprising of reducing carbapenem use is safe.

Key words: De-escalation, Multifaceted strategies, Pharmacists