

THE ROLE OF EARLY APPROPRIATE ANTIBIOTIC TREATMENT IN FEBRILE NEUTROPENIA: IDENTIFYING TARGETS FOR ANTIMICROBIAL STEWARDSHIP INTERVENTIONS

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BACKGROUND

Febrile neutropenia (FN) in haematological patients often necessitates broad-spectrum empirical antibiotic therapy (EAT), even though bacterial infections are confirmed in less than half of the cases (1). This study presents baseline data from the pre-implementation phase of the H2020 REVERSE project, a multicenter, prospective quasi-experimental study aimed at implementing an Antibiotic Stewardship (AS) intervention in four hematology wards in four European countries highly endemic for multi-drug-resistant organisms (MDROs).

METHODS

From May 1st, 2023, to April 30th, 2024, all consecutive adult patients with FN admitted to the hematology and bone marrow departments were prospectively enrolled. Clinical data, microbiological results, antimicrobial use, clinical outcomes, and 90-day all-cause and attributable mortality were analyzed through univariable and multivariable analyses. Appropriate EAT was defined as in vitro active antibiotics for clinically documented infections and guideline-compliant treatment for non-microbiologically documented infections.

RESULTS

A total of 665 episodes of FN (526 patients) were analyzed. The all-cause 90-day mortality rate was 13%. Bacterial infections were documented in 269 episodes (41%). Carbapenem resistance and ESBL production were detected in 73 episodes out of 151 involving Gram-negative bacteria (48%). Broad-spectrum beta-lactams were administered as monotherapy in 276 patients and combination therapy in 278 occasions. Appropriate EAT was administered in 455 episodes (68.6%) overall and in 220 (77%) episodes with microbiologically documented infections. Mortality due to infection accounted for 79% of the cases (52 patients). Appropriateness of EAT was not significantly associated with attributable 90-day mortality (p=0.4). The median exposure to antimicrobials after fever resolution was 8 days, regardless of EAT appropriateness. Independent predictors of all-cause mortality were chronic kidney disease, intensive care admission, and pneumonia, whereas autologous transplant and a high MASSC score were associated with decreased risk.

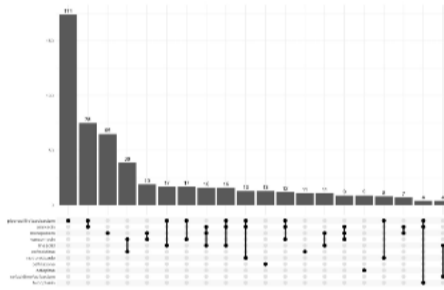


Figure 1: upset plot of the most common EAT

