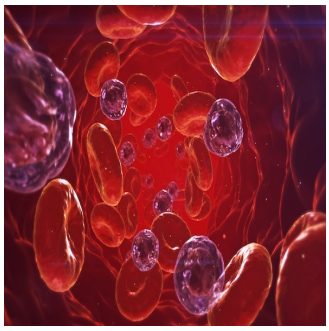
ICU
MANAGEMENT & PRACTICE

Prompt Antimicrobial Therapy in Adults with Bacteraemia



Bloodstream infections significantly impact morbidity, mortality, and healthcare costs despite advancements in critical care and antimicrobial strategies. Prompt assessment and source control, as recommended by the Surviving Sepsis Campaign, are important to improve outcomes for severe sepsis and septic shock patients. Timely source control is crucial for improving outcomes and achieving rapid defervescence in patients with source-control-required (ScR) bloodstream infections, particularly those initially critically ill.

A recent study investigates how delayed administration of appropriate antimicrobials and source control impacts short-term mortality and defervescence in two categorised groups: ScR and source-control unrequired (ScU) bacteraemia. The study discusses the evolution of views on the timely administration of appropriate antimicrobials and the critical role of source control in bloodstream infections. Early studies suggested no benefit, but recent large cohorts consistently show reduced mortality with prompt antimicrobial treatment.

The study included 5,477 patients. Each hour of delay in time-to-appropriate antibiotic (TtAa) was associated with a 0.2% increase in mortality rates for patients with ScU bacteraemia (3,953 patients) and a 0.3% increase for those with ScR bacteraemia (1,524 patients). This association was more pronounced in critically ill individuals, with mortality rates increasing by 0.4% and 0.5% per hour delay, respectively.

For patients with ScR bacteraemia, each hour of delay in time-to-source control (TtSc) was associated with a 0.31% increase in mortality rates overall and a 0.33% increase in critically ill patients. Among febrile patients, each additional hour of TtAa was linked to a 0.2% increase in delayed defervescence for ScU bacteraemia and a 0.3% increase for ScR bacteraemia. In critically ill individuals, these percentages rose to 0.5% and 0.9%, respectively.

Prompt administration of appropriate antibiotics and timely source control were crucial factors significantly associated with lower mortality rates and faster resolution of fever in patients with bacteraemia, particularly in those who were critically ill.

Overall, these findings show that prompt administration of appropriate antimicrobials was associated with better outcomes and faster resolution of fever, regardless of whether bacteraemia required source control. This association was particularly significant among critically ill patients. In cases where source control was necessary (ScR bacteraemia), delays in initiating this intervention were linked to poorer short-term outcomes and delayed resolution of fever, especially in patients initially presenting with critical illness. These findings suggest a need for future large-scale prospective studies to validate the benefits of timely interventions, aiming to reduce mortality rates and expedite recovery in patients with bacteraemia.

Source: Critical Care
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