

Trends in Antimicrobial Prescribing During Hospitalisation for Sepsis



There have been concerns that the emphasis on rapid administration of antimicrobials for sepsis may result in an increase in the overall use of antimicrobials, even in patients without sepsis.

In a study of 1,559,523 patients hospitalised at 152 hospitals in two health care delivery systems, researchers aimed to determine whether shortening the time to treatment for sepsis was associated with an increase in the use of antimicrobials, days of therapy, and broadness of antimicrobial coverage among hospitalised patients at risk for sepsis. The study included patients admitted via the emergency department during 2013-2018 with two or more systemic inflammatory response syndrome criteria.

The antimicrobial outcomes of the study focused on antimicrobial use, days of therapy, and broadness of antibacterial coverage. The clinical outcomes for the study included in-hospital mortality, 30-day mortality, length of hospitalisation, and new multidrug resistant (MDR) organism culture positivity.



The median time to first antimicrobial administration for sepsis decreased by 37 minutes from 2013 to 2018. Antimicrobial use, days of therapy, and broadness of antibacterial coverage during this same time declined among patients with potential infection. Antimicrobial use within 48 hours, days of antimicrobial therapy, and receipt of broad-spectrum coverage decreased among the broader cohort of patients with SIRS. In-hospital mortality, 30-day mortality, length of hospitalisation, new MDR culture positivity, and new MDR blood culture positivity decreased among patients with sepsis and those with SIRS. Decreases in antimicrobial use, days of therapy, and broadness of antibacterial coverage for patients with SIRS did not differ by hospital antimicrobial timing trend for sepsis. There was no evidence that accelerating antimicrobial timing for sepsis was associated with increasing antimicrobial use or impaired antimicrobial stewardship.

These findings suggest that shortening the time to antibiotics administration for sepsis is feasible without leading to indiscriminate antimicrobial use. This can inform guidelines designed to accelerate early treatment for sepsis without having spillover effects onto other patients at risk for sepsis.

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