

STUDENTS' CORNER

LETTER TO THE EDITOR

Reassessing antibiotic duration in bloodstream infections: A case for the 7-day regimen

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Dear Editor, Bloodstream infections (BSIs) are a major global health concern. They cause approximately 2.9 million deaths annually. Over half of BSIs occur within the first week of hospitalisation and nearly 80% within the first two weeks. While early and appropriate antibiotic therapy improves outcomes, evidence on optimal treatment duration is limited, highlighting the need for balanced, evidence-based guidelines.^{1,2}

The effect of antibiotic duration on the carriage of antibiotic-resistant gram-negative bacteria is well understood. Each additional day of antibiotic therapy increases resistance carriage by 7% (80% credible interval: 3–11%). This demonstrates modest reductions with shorter treatments, particularly in high-transmission settings.³ Establishing that a 7-day antibiotic regimen is no less effective than a 14-day regimen in treating bloodstream infections would not only decrease the economic burden on patients but also aid in reducing antibiotic resistance.

In a multicentre non-inferiority trial conducted across 74 hospitals in seven countries, 3,608 individuals with bloodstream infections who were hospitalised patients received either 7 or 14 days of antibiotic therapy. Patients with severe immunosuppression, infections requiring prolonged treatment, *Staphylococcus aureus* bacteraemia, or likely contaminants were excluded. Antibiotic choice and administration were at the discretion of the hospital team. 90-day all-cause mortality was assessed for both groups. Mortality occurred in 14.5% of patients in the 7-day group and 16.1% in the 14-day group, with a difference of -1.6 percentage points (95.7% CI: -4.0 to 0.8), meeting the non-inferiority margin of 4%. Per-protocol analysis supported these findings. Most infections originated from the urinary

tract, abdomen, or lungs, with consistent results across various subgroups. Despite 23.1% of patients in the 7-day antibiotic group receiving extended therapy, the study shows that shorter antibiotic courses are as effective as longer ones in appropriately selected patients with bloodstream infections.¹

Considering the findings of the aforementioned study and the precarious economic conditions of a developing country like Pakistan, which is plagued by resource scarcity even in tertiary care hospitals, shifting from a 14-day to a 7-day antibiotic regimen is not only economically feasible but also decreases the risk of antibiotic resistance. Treating cases of AMR resulted in an additional cost of approximately USD 33.97 (PKR 9,483.2) compared with treating susceptible infections due to longer hospital stays and additional hospital charges. This leads to not only a greater economic burden on patients but also increased patient load and stress on hospital management.⁴

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