

Antibiotic Delay Intervals, Mortality Among Patients With Suspected Sepsis



Timely delivery of antibiotics is a major cornerstone of sepsis therapy. Clinical evidence suggests that every one-hour delay in antibiotics after emergency department (ED) triage or the onset of organ dysfunction or shock could result in a 3-7% increase in the odds of a poor outcome. The Surviving Sepsis Campaign (SSC) guidelines recommend antibiotic initiation within one hour of ED triage, while the Centers for Medicare and Medicaid Services Early Management Bundle for Severe Sepsis/Septic Shock core quality measures recommend antibiotics should be administered within three hours of identification of sepsis.

While timely administration of antibiotics is an important strategy for patients with suspected sepsis, it may not be a feasible or appropriate target for all patients. Also, the time targets for specific components of antibiotic delivery remain unclear. Some data suggest that delays from antibiotic order to infusion are common and may be associated with increased mortality. Delay in recognition of sepsis is the largest contributor to the total interval from ED triage to antibiotic infusion.

Both these goals - clinical recognition of sepsis and prompt delivery of antibiotics - are important, but it is important to determine the contribution of each to mortality.

In a new study, researchers quantified time intervals comprising the task of antibiotic delivery and evaluated the association between interval delays and hospital mortality among patients who were treated in the emergency department for suspected sepsis. They used data from 12 hospitals and selected patients 18 years or older who presented in the ED and were hospitalised with clinically suspected sepsis. Suspected sepsis was defined as both digital signature of infection and digital signature of organ dysfunction.

Antibiotic administration was divided into two intervals - time from ED triage to antibiotic order (recognition delay) and time from antibiotic order to infusion (administration delay).

Results showed that both recognition delays and administration delays were associated with an increase in hospital mortality. However, this association was only observed for longer delays. Administration delay comprised only one-fifth of the total delay, while recognition delay comprised four-fifths of total delay. Recognition delay of greater than six hours was associated with a 61% increased odds of mortality compared with recognition delay of less than one hour.

These findings suggest that both metrics are important to measure and improve for patients with suspected sepsis. However, the results do not support targets less than one hour since this target may be too aggressive.

Source: [Critical Care Medicine](#)

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