HealthManagement
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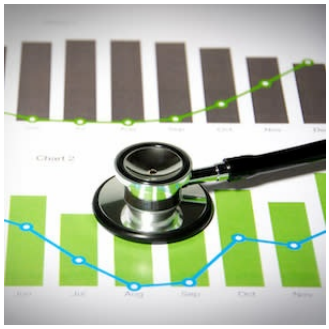
Temporal Trends in Mortality of Patients with Sepsis



Sepsis, characterised by severe organ dysfunction, is a major cause of hospitalisation and mortality globally. The WHO recognises sepsis as a significant global health concern, urging efforts to enhance outcomes for affected individuals.

Despite no new targeted therapies emerging for sepsis in recent decades, advancements in ICU management, shifts in patient demographics, and improved supportive care practices have influenced sepsis outcomes. Critical care services expansion, refined supportive care practices, and initiatives emphasising early sepsis recognition and treatment have evolved. However, detailed longitudinal data on critically ill patients are scarce. Studies indicate that mortality rates related to sepsis have decreased over time. However, it remains uncertain how much of this improvement can be attributed to changes in the types of cases seen versus enhancements in treatment methods.

This study uses data from the U.K. to explore temporal trends in sepsis presentation and outcomes among ICU admissions from the late 1980s to the present. By considering changes in patient demographics, the study aimed to quantify the potential impact of alterations in ICU sepsis management on outcomes.

The study included 426,812 patients with a median age of 66 years, of whom 55.6% were male. The most common sites of infection were respiratory (60.9%), genitourinary (11.5%), and gastrointestinal (10.3%).

As per the analysis, both unadjusted and adjusted hospital mortality rates decreased over time (from 55% to 32% unadjusted and from 44% to 35% adjusted, representing reductions of 22% and 9%, respectively). Changes in patient case mix upon ICU arrival, including age, chronic conditions, infection source, and illness severity, explained a 13.4% reduction in observed hospital mortality. However, an additional 8.8% reduction suggests potential improvements in ICU care, although residual confounding cannot be ruled out.

A comparison between patients from 1988-1990 and 2017-2019 revealed that those in the latter period were older (median 66 vs. 63 years), less acutely ill and more frequently had genitourinary sepsis. Hospital mortality decreased from 54.6% in 1988-1990 to 32.4% in 2017-2019. The adjusted absolute reduction in hospital mortality from 1988-1990 to 2017-2019 was 8.8%.

These findings thus suggest that while 60% of the observed reduction in hospital mortality could be attributed to changes in patient demographics, 40% may be attributed to improvements in ICU management.

Source: AJRCCM
Image Credit: iStock

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