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## Comparing Hospital-Onset Sepsis and Community-Onset Sepsis



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Sepsis is a heterogeneous syndrome. It has varying characteristics and therapeutic items depending on the patient's background, socio-economic status, geographic reason, causative pathogens, site of infection, host responses and quality of care. This heterogeneity makes the management of sepsis even more challenging and hinders clinical research planning. This significantly limits the discovery of effective treatment options for the sepsis subgroup of patients.

A more comprehensive understanding of the epidemiology of sepsis by location, i.e. hospital-onset sepsis or community-onset sepsis, could help plan future studies of sepsis and devise healthcare policies. This is because both hospital- and community-onset sepsis are significant subgroups of sepsis.

Researchers performed a retrospective cohort study using the Japanese Diagnosis and Procedure Combination database. The goal was to describe the epidemiology of hospital- and community-onset sepsis in critical care units in Japan and understand the differences in characteristics and clinical outcomes between the two subgroups.

A total of 516,124 adult patients admitted with sepsis from April 2010 to March 2020 were included in the study. 10% had hospital-onset sepsis, and 89.9% had community-onset sepsis. The primary outcome of the study was in-hospital mortality. Secondary outcomes included critical care unit mortality up to day 14, number of days with critical care unit charge up to 14 days, length of stay in the hospital, and the number of days required for organ support after admission.

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Subgroup analysis was performed using the following characteristics: admission to tertiary medical care centres, admission to hospitals with a critical care training unit, surgical procedures with general anesthesia during hospitalisation, use of vasopressors on the day of critical care unit admission, use of mechanical ventilation on the first and second day of critical care unit admission, renal replacement therapy within 14 days after admission and admission to critical care unit limited to ICUs.

The analysis showed that hospital-onset sepsis was characterised by younger age, infrequent hospitalisation, frequent surgery under general anaesthesia and frequent organ support compared to community-onset sepsis. In addition, in-hospital mortality was 35.5% for hospital-onset sepsis compared with 19.2% for community-onset sepsis. Hospital length of stay was also longer for hospital-onset sepsis (47 days) than for community-onset sepsis (30 days).

These findings suggest that patients admitted with hospital-onset sepsis had a poorer prognosis and greater resource utilisation (more organ support, more days in critical care, longer hospital stay) than those with community-onset sepsis.

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