Outcomes of patients with septic shock adhering to a standardized protocol

Aisha Siddiqua[1*], Zareen Qasmi[1], Shagufta Kanwal[1]
1. Childlife Foundation Karachi, Pakistan
Correspondence to: Aisha Siddiqua
*Childlife Foundation Karachi, Pakistan.
Email: aayshasiddiqua4@gmail.com
DOI: 10.24911/SJEMed.12-2617

Background: Sepsis is a life-threatening condition caused by a dysregulated response to infection, resulting in tissue damage, organ dysfunction, septic shock, multiorgan failure, and death. In 2020, approximately 48.9 million sepsis cases and 11 million sepsis-related deaths occurred worldwide, representing 20% of global mortality. Nearly 20 million cases occurred in children under five, while around 15 of every 1,000 hospitalized patients develop healthcare-associated sepsis. Early recognition and standardized management are therefore essential, particularly in emergency settings where timely intervention can influence survival.

Objective: To evaluate outcomes of pediatric patients with septic shock receiving early protocol-driven management, including fluid resuscitation, inotropic support, and antibiotics, within the first hour of emergency department presentation.

Methods: This retrospective cross-sectional study reviewed electronic medical records from emergency resuscitation rooms supported by the Child Life Foundation organization between December 1, 2024 - May 31, 2025. Pediatric patients aged 28 days to 13 years, triaged as P1 or P2 and diagnosed with sepsis, severe sepsis, or septic shock, were included. Management comprised intravenous fluid boluses, inotropic support with dopamine or adrenaline, and intravenous antibiotics according to the standardized septic shock protocol.

Results: A total of 1,704 patients were included. Protocol adherence occurred in 301 patients (17.6%), while 1,403 patients (82.33%) had non-adherence. Mortality in the adherence group was 146 (18.5%), compared with 926 (56%) in the non-adherence group.

Conclusion: Strict adherence to septic shock protocol significantly improves pediatric patient outcomes, including reduced mortality, and implementing and maintaining protocol adherence should be prioritized in emergency settings.

Keywords: Pediatric sepsis, septic shock, protocol adherence, early management, fluid resuscitation, inotropic support, antibiotics, emergency department, mortality.