

Background: Patients with hematological diseases admitted to the intensive care unit (ICU) represent a high-risk subgroup characterized by profound immunosuppression, disease-specific emergencies, and treatment-related toxicity. Despite advances in hematology and critical care, a lingering perception of poor prognosis may still influence ICU triage and escalation decisions. **Objectives:** To characterize the clinical profile, admission etiologies, organ support requirements, complications and outcomes of hematological patients admitted to a tertiary ICU over 5 years, and to identify factors associated with mortality. **Methods:** We conducted a retrospective observational study including adult patients with hematological diseases admitted to a single tertiary ICU over five years. Baseline demographics, hematologic diagnoses, treatment lines, and illness-severity scores at admission were recorded. We analyzed causes for ICU admission, infectious complications and microbiology, hematologic emergencies, organ support therapies - including invasive mechanical ventilation (IMV), vasopressors, renal replacement therapy (RRT), and plasmapheresis. Primary outcomes were ICU and 28-day mortality; secondary outcomes included ICU readmission. Survivors and non-survivors were compared. **Results:** Ninety-four patients were included. The average age was 58.9 ± 15.2 years and 57% were male. Acute leukemias and aggressive lymphomas were the most frequent underlying diseases. Respiratory failure and sepsis were the leading causes of ICU admission. Gram-negative bacteria were the most frequently isolated pathogens, particularly *Escherichia coli* and *Pseudomonas aeruginosa*. More than 50% of the patients required IMV and most required vasopressor support; a subset received RRT and plasmapheresis. ICU mortality was 35%, increasing to 56% at day 28. Non-survivors had higher severity scores, lower PaO₂/FIO₂ ratios, and required more invasive organ support. ICU readmission occurred in approximately 25% of cases. **Conclusions:** Critically ill patients with hematological diseases frequently present with infection-driven organ failure requiring aggressive organ support, yet meaningful survival is achievable even in severe cases. Outcomes appear primarily determined by the severity of acute organ dysfunction – particularly hypoxemic respiratory failure requiring IMV - rather than the underlying malignancy per se. These findings support early ICU involvement, proactive escalation of organ support and multidisciplinary management, reinforcing the concept of a distinct critical-illness phenotype within hematology.

Mortality outcomes of targeted temperature management in specific patient subgroups after cardiac arrest

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Introduction: Targeted temperature management (TTM) has historically been recommended to mitigate neurological injury following

cardiac arrest. However, recent evidence has failed to demonstrate a survival benefit of therapeutic hypothermia compared with normothermia. Uncertainty remains regarding its potential benefit in specific patient subgroups. This study aimed to investigate whether TTM improves mortality outcomes in selected subgroups of patients after cardiac arrest. **Methods:** We conducted a retrospective observational study including all adult patients admitted to the intensive care unit (ICU) of a tertiary hospital between January 2021 and December 2024 following cardiac arrest with sustained return of spontaneous circulation (ROSC). Exclusion criteria were ICU length of stay <72 hours, absence of clinical records, and severe hypoxic-ischemic brain injury at admission. Clinical variables included arrest location, initial rhythm, duration of cardiac arrest, SOFA and APACHE scores, and temperature profile during the first 72 hours. Patients were categorized into seven subgroups according to cardiac arrest etiology. TTM was defined as active temperature control targeting 32–36°C. The primary outcome was mortality, analyzed using Pearson's chi-square test across predefined patient subgroups. **Results:** A total of 166 patients were included in the study. The predominant etiologies of cardiac arrest were respiratory (33.7%) and cardiac (43.4%), while the remaining etiologies (septic, hypovolemic, neurological, metabolic, and traumatic) were underrepresented and did not reach statistical significance. Targeted temperature management (TTM) was significantly associated with increased mortality in respiratory patients (94.4% vs. 27.3%, $p < 0.001$; OR 0.024, 95% CI 0.005–0.124). Similarly, among cardiac patients—historically considered the subgroup most likely to benefit from TTM—no benefit was observed, with a potential signal of harm (62.5% vs. 11.1%, $p = 0.013$; OR 0.230, 95% CI 0.077–0.689). Furthermore, in patients without fever within the first 72 hours, TTM was associated with significantly higher mortality in both respiratory and cardiac subgroups. These findings should be interpreted with caution, as they may reflect confounding by indication, with more severely ill patients being preferentially selected for TTM. **Conclusions:** In this cohort, TTM was not associated with improved survival and was linked to higher mortality in both respiratory and cardiac etiologies. These findings reinforce the uncertainty surrounding the benefit of TTM in specific patient populations and highlight the need for careful patient selection. However, given the observational design, the potential for confounding by indication must be acknowledged, and further prospective studies are warranted to clarify its role across different etiologies of cardiac arrest.

Health impacts of micro- and nanoplastics in humans: systematic review of in vivo evidence

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