

Risk Factors for Mortality in Asian Children Admitted to the Paediatric Intensive Care Unit after Haematopoietic Stem Cell Transplantation

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Abstract

Introduction: This study aimed to investigate the risk factors associated with mortality in haematopoietic stem cell transplant (HSCT) patients admitted to our paediatric intensive care unit (PICU) over an 8-year period. **Materials and Methods:** A retrospective chart review was conducted of all HSCT patients requiring PICU admission at our centre (a tertiary care university hospital in Singapore) from January 2002 to December 2010. Chief outcome measures were survival at the time of PICU discharge and survival at 6 months after initial PICU admission. **Results:** Ninety-eight patients underwent HSCT during this period; 18 patients (18%) required 24 PICU admissions post-HSCT. The overall survival to PICU discharge was 62.5%. Of those who survived discharge from the PICU, 33% died within 6 months of discharge. Non-survivors to PICU discharge had a higher incidence of sepsis (89% vs 33%, $P = 0.013$) and organ failure as compared to survivors (cardiovascular failure 100% vs 20%, $P = 0.0003$; respiratory failure 89% vs 20%, $P = 0.002$; and renal failure 44% vs 7%, $P = 0.047$). Mortality rates were higher in patients requiring mechanical ventilation (70% vs 14%, $P = 0.010$) and inotropic support (70% vs 14%, $P = 0.010$). Mortality in all patients with renal failure requiring haemodialysis ($n = 4$) was 100%. Presence of 3 or more organ failures was associated with 80% mortality ($P = 0.003$). **Conclusion:** Sepsis, multiple organ failure and the need for mechanical ventilation, inotropes and especially haemodialysis were associated with increased risk of mortality in our cohort of HSCT patients.

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