

COVID-19 disease in children and adolescents following hematopoietic stem cell transplantation: A report from the Turkish Pediatric Bone Marrow Transplantation Study Group

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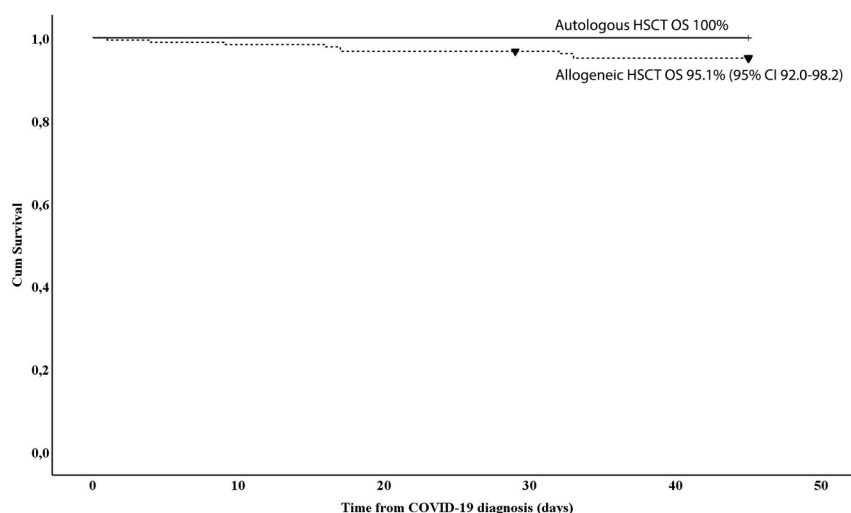
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Abstract

Background: Data on the outcome and risk factors of pediatric patients with SARS-CoV-2 infection (COVID-19) following hematopoietic stem cell transplantation (HSCT) are limited. **Objectives:** We aimed to describe risk factors for a severe course and mortality. **Method:** In this nationwide study, data were collected retrospectively from 28 transplant centers. **Results:** One hundred ninety-six children [(63.8% male; median age 8.75 (IQR, 4.86-14.30)] who received allogeneic (n: 184, 93.9%) or autologous (n: 12, 6.1%) HSCT were included. The median time from HSCT to SARS-CoV-2 infection was 207.5 days (IQR, 110.2-207.5). The most common clinical manifestation was fever (58.2%), followed by cough (33.7%); 43 cases (21.9%) were asymptomatic. Lower respiratory tract disease (LRTD) and multisystem inflammatory syndrome in children (MIS-C) developed in 58 (29.6%) and 8 (4.1%) patients, respectively. Twenty-six patients (13.3%) required ICU admission. Nine patients died at a median of 17 days (min-max 1-33) after COVID-19 diagnosis, 6 of whom died due to the disease, with a COVID-19 lethality rate of 3.1%. The 6-week overall survival was 95.4% (95% CI 92.5-98.3). Multivariate analysis found that HSCT with a mismatched donor (OR, 8.98, p: 0.039) and LRTD (OR, 61.55, p: 0.001) were independent risk factors for ICU admission; MIS-C (OR, 9.55, p: 0.044) and lymphopenia (OR, 4.01, p: 0.030) at diagnosis were risk factors for mortality. **Conclusion:** Overall mortality was lower in children than in adult counterparts, and HSCT with a mismatched donor, lymphopenia, LRTD, MIS-C and ICU admission were important risk factors for adverse outcomes.

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