

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

CEYHUN BOZKURT<sup>1</sup>, Volkan Hazar<sup>2</sup>, Baris Malbora<sup>3</sup>, Alphan Küpesiz<sup>4</sup>, Utku Aygüneş<sup>5</sup>, Tunc Fısgın<sup>6</sup>, Musa Karakükçü<sup>7</sup>, Baris Kuskonmaz<sup>8</sup>, Suar Çakı Kilic<sup>9</sup>, Derya Bayırlı<sup>3</sup>, Özlem Arman Bilir<sup>10</sup>, Koray Yalcin<sup>11</sup>, Salih Gözmen<sup>12</sup>, Vedat Uygun<sup>11</sup>, Murat Elli<sup>13</sup>, Hakan Sarbay<sup>3</sup>, Funda Küpesiz<sup>4</sup>, Hatice İlgen Şaşmaz<sup>5</sup>, Basak Aksoy<sup>6</sup>, Ebru Yılmaz<sup>7</sup>, Fatma Okur<sup>8</sup>, Funda Tekkeşin<sup>9</sup>, Fatma Demir Yenigürbüz<sup>5</sup>, Gülcihan Ozek<sup>14</sup>, Avni Atay<sup>3</sup>, İkbâl Ok Bozkaya<sup>10</sup>, Suna Çelen<sup>11</sup>, Seda Ozturkmen<sup>11</sup>, Adalet Gunes<sup>15</sup>, Orhan Gursel<sup>16</sup>, Elif Guler<sup>4</sup>, Alper Özcan<sup>7</sup>, Duygu Uçkan<sup>8</sup>, Selime Aydogdu<sup>9</sup>, Namık Yaşar Özbek<sup>10</sup>, Gulsun Karasu<sup>11</sup>, Gulay Sezgin<sup>17</sup>, Omer Dogru<sup>18</sup>, Davut Albayrak<sup>11</sup>, Gülyüz Öztürk<sup>5</sup>, Serap Aksoylar<sup>14</sup>, Hayriye Daloglu<sup>11</sup>, Işık Odaman Al<sup>13</sup>, Melike Sezgin Evim<sup>15</sup>, Sinan Akbayram<sup>19</sup>, Yurday Öncül<sup>20</sup>, Emine Zengin<sup>21</sup>, Canan Albayrak<sup>22</sup>, Timur Cetin<sup>23</sup>, Yeter Düzenli Kar<sup>24</sup>, Hasan Fatih Çakmaklı<sup>25</sup>, Özlem Tüfekçi<sup>26</sup>, Ersin Toret<sup>27</sup>, and Bulent Antmen<sup>5</sup>

<sup>1</sup>Istinye University School of Medicine

<sup>2</sup>Memorial Health Group

<sup>3</sup>Yeni Yüzyıl University School of Medicine

<sup>4</sup>Akdeniz University School of Medicine

<sup>5</sup>Acibadem Saglik Grubu

<sup>6</sup>Altınbaş University School of Medicine

<sup>7</sup>Erciyes University School of Medicine

<sup>8</sup>Hacettepe University School of Medicine

<sup>9</sup>Umraniye Egitim Ve Arastirma Hastanesi

<sup>10</sup>Ankara Sehir Hastanesi

<sup>11</sup>Medical Park Hospitals Group

<sup>12</sup>SBU Dr Behcet Uz Cocuk Hastaliklari Ve Cerrahisi Egitim Ve Arastirma Hastanesi

<sup>13</sup>Medipol University School of Medicine

<sup>14</sup>Ege University School of Medicine

<sup>15</sup>Uludağ University School of Medicine

<sup>16</sup>Ankara Gulhane Egitim ve Arastirma Hastanesi

<sup>17</sup>Çukurova University School of Medicine

<sup>18</sup>Marmara University School of Medicine

<sup>19</sup>Gaziantep University School of Medicine

<sup>20</sup>Inönü University School of Medicine

<sup>21</sup>Kocaeli University School of Medicine

<sup>22</sup>Ondokuz Mayıs University School of Medicine

<sup>23</sup>Yeditepe University Hospital

<sup>24</sup>Afyon Health Sciences University School of Medicine  
<sup>25</sup>Ankara University School of Medicine  
<sup>26</sup>Dokuz Eylül University School of Medicine  
<sup>27</sup>Osmangazi University School of Medicine

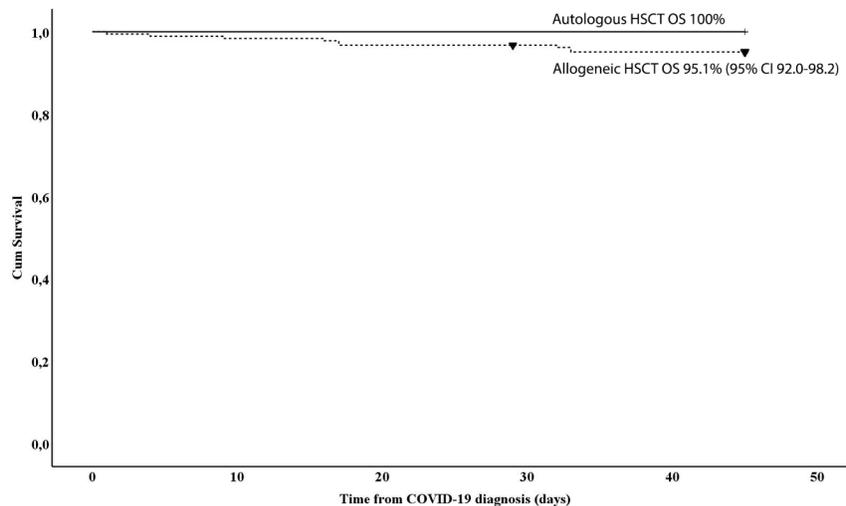
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## Abstract

**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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