COMPARABLE OUTCOMES WITH HAPLOIDENTICAL AND MATCHED DONOR TRANSPLANTS IN CHILDREN WITH HIGH-RISK OR RELAPSED AML AND MDS IN A RESOURCE-LIMITED SETTING

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Background: Children with high-risk acute myeloid leukaemia (AML) and myelodysplastic syndrome (MDS) often face poor outcomes, even after allogeneic stem cell transplantation (SCT). This challenge is further compounded in low- and middle-income countries (LMICs) due to limited access to optimal supportive care. We report the outcomes of children and adolescents with high-risk or relapsed AML and MDS who underwent SCT at a tertiary cancer centre in India.
Methods: This retrospective study included children and adolescents (≤18 years) with high-risk or relapsed AML or MDS who underwent SCT between 2014 and 2024 at our institution. Demographic, transplant-related, and outcome data were collected. Overall survival (OS) and event-free survival (EFS) were estimated using the Kaplan–Meier method.
Results: Data of 23 patients (19 males, 4 females; median age 9 years, IQR 6–15) was analysed. Donor types included matched sibling donor (n=7), haploidentical family donor (n=11), matched unrelated donor (n=2), and autologous transplant (n=3). Peripheral blood stem cells were used in all cases. Conditioning regimens varied and included Fludarabine+Busulfan, Busulfan+Cyclophosphamide, Busulfan+Melphalan, and Fludarabine+Thiotepa+Treosulfan. GVHD prophylaxis included methotrexate+cyclosporine for matched donor transplants and post-transplant cyclophosphamide+cyclosporine+MMF for haploidentical transplants.
At a median follow-up of 36 months, the 3-year OS and EFS were both 49.4% (±11.7%). The 3-year OS for matched vs. haploidentical donor transplants was 48.6% vs. 46.7%, respectively (P=0.764). Age ≤10 vs. >10 years did not significantly impact OS (30.3% vs. 69.3%, P=0.167).
Conclusion: SCT offers a curative option for children and adolescents with high-risk or relapsed AML and MDS, even in LMIC. Outcomes with haploidentical donor transplants were comparable to those with matched donor transplants, supporting their use when matched donors are unavailable.