Haploidentical stem cell transplantation for children with high-risk leukemia

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Background: The Chilean population is ethnically diverse, and more than 50% of children referred for hematopoietic stem cell transplantation (HSCT) lack a suitable donor. Procedure: To expand the donor pool, we assessed the feasibility, tolerance, and efficacy of using a haploidentical (HI) donor and a reduced-intensity conditioning regimen for high-risk pediatric leukemia. This study was facilitated by technology transfer from St. Jude Children's Research Hospital over the 2 preceding years. Results: Between March 2006 and April 2009, 10 patients (median age, 9.8 years) received T cell-depleted grafts at Calvo Mackenna Hospital in Santiago. Median cell doses were CD34+: 7.45×106/kg (range, 4.00-20.20×106/kg); CD3+: 0.88×105/kg (0.11-1.35×105/kg); and CD56+: 71.30×106/kg (31.50-131.80×106/kg). Nine patients experienced complete engraftment; six of the nine remain alive and clinically well 13-50 months post-HSCT. Three patients died after bone marrow relapse, while only one died of tran