COMPARABLE OUTCOMES AFTER ALLOGENEIC STEM CELL TRANSPLANTATION FROM HAPLOIDENTICAL, MATCHED RELATED, AND UNRELATED DONORS IN PATIENTS WITH MYELODYSPLASTIC SYNDROMES: A RETROSPECTIVE MULTICENTER STUDY BY THE ARGENTINE GROUP FOR STEM CELL TRANSPLANTATION AND CELLULAR THERAPY

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Background: HLA-matched sibling donors (MSD) have traditionally been preferred for allogeneic stem cell transplantation (alloSCT). However, improved outcomes with matched unrelated (MUD) and haploidentical donors (Haplo) using anti-thymocyte globulin (ATG) or post-transplant cyclophosphamide (PTCy) may challenge this paradigm.
Methods: We retrospectively analyzed 147 adult patients with myelodysplastic syndromes (MDS) who underwent alloSCT from an MSD (n=50), MUD (n=50), or Haplo (n=47) between 2015 and 2023 across 14 centers in Argentina. The primary endpoint was graft-versus-host disease–relapse-free survival (GRFS). Secondary endpoints included overall survival (OS), progression-free survival (PFS), cumulative incidence of relapse (CIR), non-relapse mortality (NRM), and incidence of acute (aGvHD) and chronic (cGvHD) graft-versus-host disease. Outcomes were assessed at 2 years by donor type.
Results: Most patients had an IPSS-R >3.5 (n=114, 77.5%) and received myeloablative conditioning (n=80, 54.4%). Median recipient age was highest in the Haplo group (59 years; $p<0.01$), while donor age was highest in the MSD group (46 years; $p<0.01$). After a median follow-up of 17 months (range, 0.4–107), no significant differences were observed in GRFS, OS, PFS, CIR, NRM, or cGvHD across groups. Grade II and III–IV aGvHD by day 100 were significantly lower in the Haplo group (23%; p=0.01 and 2%; p=0.007, respectively). In multivariate analysis, HCT-CI >2 predicted inferior GRFS (HR 2.15; p=0.007), while cGvHD was protective for PFS (HR 0.26; $p<0.001$). Poor/very poor cytogenetics (CTG) predicted worse PFS (HR 1.78; p=0.03) and relapse (HR 3.00; p=0.009). ATG (HR 0.20; p=0.009) and PTCy (HR 0.30; p=0.003) were associated with reduced cGvHD risk. The leading cause of failure differed by donor: relapse in MSD, mixed causes in MUD, and infections in Haplo.
Conclusions: Donor type did not impact major outcomes. MUD and Haplo are valid alternatives to MSD in alloSCT for MDS.