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Double Unit Umbilical Cord Blood Transplant for Adults with Acute Leukemia and Myelodysplastic Syndrome Results in Comparable Outcome As Matched Sibling or Unrelated Donor Transplant Only after Myeloablative Conditioning but Not Reduced Intensity Conditio

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Introduction: The infusion of 2 partially HLA-matched umbilical cord blood (UCB) is a potential strategy for extending UCB transplantation to more patients. The risk and benefits of double UCB transplantation (dUCBT) relative to those observed after transplantation with related and unrelated adult donors remains to be determined.
Methods: Two hundred and eighty three adult patients undergoing first allogeneic transplant for acute myeloid leukemia (N=166), acute lymphocytic leukemia (N=87) and myelodysplastic syndrome (N=30) at Singapore General Hospital (N=176) and National University Cancer Institute, Singapore (N=107) between 2005-2013 were studied. The patients received transplantation using matched related donor (MRD, n=172), matched unrelated donor (MUD, n=70) or 4-6/6 HLA matched dUCB (n=41) graft after myeloablative conditioning (MAC, n=147) or reduced intensity conditioning (RIC, N=136), consisting of fludarabine, cyclophosphamide (120 mg/kg for MAC , 50 mg/kg for RIC) and total body irradiation (12-14 Gy for MAC, 2 Gy for RIC).
Results: The leukemia free survival at 5 years was similar for each donor type, 43% for dUCB, 45% for MSD and 42% for MUD (p=0.26). There was no statistically significant difference in relapse-related death and transplant-related mortality among the 3 donor types. However, when the outcome was analyzed separately according to conditioning regimen, a significant difference in survival was observed among patients receiving RIC. As compared to the recipients of MSD or MUD, the risk of relapse-related death was highest in recipients of dUCB (HR 2.75, 95% CI 1.05-7.1; p=0.04) after RIC, resulting in the lowest overall survival (dUCB 9%; MSD 43%; MUD 29%; p=0.009). For patients receiving MAC, leukemia-free survival in patients after dUCBT (59%) was comparable to that after MSD (46%) and MUD (52%) transplantation (p=0.82)
Conclusions: Our results support the use of 2 partially HLA-matched UCB as a suitable alternative for patients without an available HLA matched donor. However, the use of RIC for dUCBT is still limited by high incidence of relapse. Future studies are necessary to define the best regimen that can induce sustained engraftment without increasing the risk of relapse and regimen-related toxicity.

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Allogeneic Hematopoietic Stem Cell Transplantation (aHSCT) In Adult Patients With Acute Lymphoblastic Leukemia (ALL): Experience Of The Hematology-Oncology Department At Pontificia Universidad Católica De Chile Between 1994 and 2013

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Introduction: In adult patients with high risk ALL, defined as Philadelphia cromosome ALL (Phi+) or slow response to chemotherapy, sibling donor aHSCT in first remission is recommended as consolidation treatment after achieving a complete remission. Still is unclear what other subgroup of adult patients benefit the most from aHSCT.
Objectives: The primary objective was to describe the clinical outcomes of ALL patients after aHSCT in our center, including overall survival (OS), relapse-free-survival (RFS) and transplant-related-mortality (TRM) .
Results: Between 1994 and 2013, 37 patients with ALL were transplanted, 16 Phi+ and 21 Phi-. Two patients had a second transplant for relapsed ALL Phi+, therefore 39 aHSCT procedures for ALL have been performed in our center. The average age is 33 yo (range: 17-56) and 68% were male patients (n=25). Phi+ patients were mostly >30 yo (63%, n=10), as compared to Phi- that were mostly ≤30 yo (67%, n=14). Most transplants were performed in first remission (70%, n=22), under myeloablative conditioning regimen in 92% (n=34). Reduced intensity conditioning (RIC) regimen was used because of age (n=1; Phi-) and relapse (n=2; Phi+). GVHD prophylaxis consisted of cyclosporin A and methotrexate in all the patients. Among Phi+ patients, 69% (n=11) had TKI prior to aHSCT. Only 25% (n=4) received TKI as maintenance therapy after aHSCT. Average CD34 dose collected by leukapheresis was $5.5x10^6$/kg (range: 2,14−9,16x10^6/kg), with mean platelet engraftment at day 15 after transplant (range: 8-25 days) and mean neutrophil engraftment at day 16 after transplant (no filgrastim is used after transplant) (range: 10-22 days). In Phi+ patients, 3-year EFS and OS was 49% and 64%, respectively. In Phi- patients 3-year EFS and OS was 40% and 43%, respectively. One year TRM was 14% in Phi- and 21% in Phi+ ALL patients. Univariate analysis failed to show a correlation between RFS and OS with pre and post aHSCT minimal residual disease as measured by multicolor flow cytometry and PCR (in Phi+ ALL patientes) or remission status (CR1 vs CR≥2).
Conclusions: Our data on the outcomes of ALL patients were consistent with that reported in literature. In our series, OS in Phi+ patients was superior to those with Phi-, we speculated that it may be at least in part due to disease erradication by TKI. Our data support our practice of offering aHSCT early in the disease course for patients with ALL patients, specially Ph+ ALL patients.

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Critical Care Unit Admission Of Hematopoietic Stem Cell Transplant Patients In An University Hospital In Chile

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Background: Hematopoietic Stem Cell Transplantation (HSCT) is a potentially curative treatment for a number of hematological malignancies and hereditary disorders. However, patients undergoing HSCT may have serious complications that require support in an intensive care unit (ICU), with significant associated mortality and reported 6-month overall survival (OS) less than 5%.
Patients and Methods: Retrospective study of adult patients undergoing autologous, allogeneic and umbilical cord blood HSCT between 2007 and 2011 who required ICU transfer at