Although RIC AHPCT can be performed as an outpatient, many pts who receive this therapy still are later hospitalized. An assessment of predictive factors prior to transplant would be useful to help develop strategies to reduce hospitalizations after outpatient RIC AHPCT as well as to counsel pts further regarding post-transplant risk. We retrospectively evaluated 132 consecutive adult pts with hematologic diseases who received RIC AHPCT at our institution from 1/2000-12/2009. Pts received fludarabine and either 200 cGy (N = 45) or 400 cGy (N = 87) TBI. GVHD prophylaxis: mycophenolate and either cyclosporine for those with related donors (N = 79) or tacrolimus for those with unrelated donors (N = 53). Median age was 57 years (range, 18-70) and 78 were males. Diagnoses included 73 myeloid and 55 lymphoid malignancies and 4 hematologic diseases. 92 had no HLA disparate donor, 12 had an HLA disparity at HLA-A, B, C or DRB1 (major), and 28 had an HLA disparity at HLA-DQ or DP (minor). CIBMTR comorbidity index (CI): 51 low, 43 intermediate and 38 high risk pts. 120 (90%) were hospitalized post transplant at a median of 14 days (range, day 0 to +475) and the most common reasons were: 72 fevers, 46 infections and 19 acute GVHD. Risk factors for hospitalization were assessed by Cox proportional hazards analysis. Variables included gender, age, CI, no. prior chemotherapies, prior radiation, diagnosis, TBI dose, donor relationship, HLA disparities, TNC/CD34+ doses and time of transplant relative to the 1st one on 1/10/00. From the univariable analysis the no. of prior chemotherapies, TBI dose, unrelated donor and HLA disparity were associated with an increased risk for hospitalization, while a larger TNC dose was associated with a lower risk. In multivariable analysis 2 variables remained prognostic: 400 cGy TBI ($p = 0.026$) and HLA disparity [minor/none; $p < 0.001$; major/none; $p = 0.07$]. Although the majority of pts received 400 cGy TBI, we previously did not find a difference in time to neutrophil engraftment compared to those receiving 200 cGy TBI (Sobecks et al. BMT 2008;42:715-22). We conclude that HLA disparities and 400 cGy TBI may delay immune reconstitution resulting in more infections that require hospitalization after RIC AHPCT. Future strategies to enhance immune reconstitution after this approach are warranted and if effective may have important implications regarding reductions in expenses and healthcare resources associated with inpatient hospitalization.

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ALLOGENEIC HAEMATOPOIETIC CELL TRANSPLANTATION USING INTRAVENOUS BUSULFAN IN MYELOABLATIVE AND REDUCED-INTENSITY CONDITIONING REGIMEN IN ACUTE LEUKEMIA PATIENTS. A COMPARISON ANALYSIS WITH ORAL BUSULFAN

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Introduction: Recently oral Busulfan (OBu) has been replaced by intravenous Bu (IVBu) in allogeneic stem cell transplantation (HCT) conditioning regimens in acute leukaemia (AL) due more predictable pharmacokinetic and lower toxicity.

Patients and Methods: We present results from a single centre, retrospective study, using IVBu vs OBu plus Fludarabine (Flu) or Cyclofosfamide (Cy) as a reduced-intensity (RIC) and myeloablative conditioning regimen in AL patients.

We analyzed 66 patients, from 2000 to 2010, with a median age 45 (8-71) years, 27 patients received HCT with RIC, Flu 150 mg/m2 in 5 days and IVBu 8,2 mg/m2 or OBu 10 mg/kg in 3 days and 39 patients received HCT with myeloablative Cy 120 mg/kg in 2 days and IVBu 12,8 mg/m2 or OBu 16 mg/kg in 4 days.

Results: All patients grafted as follows: neutrophils > 0.5 x 109/l at a median of 17 days and platelet > 20 x 109/l at 21 days. Fifteen patients (23%) showed acute GVHD grade III-IV, 17 (26%) chronic GVHD, 15 (23%) liver dysfunction and 8 (12%) EVOH. There were not differences in liver disease after HCT between two groups (IVBu vs OBu) and also in incidence of infections and relapse. With a median follow-up for alive patients of 54 months (15-120), 4-year overall survival was 39% and 50% for OBu and IVBu, respectively ($p = 0.36$) with no differences between the conditioning regimens groups. 4-year progression-free survival was 81% and 54% for OBu and IVBu, respectively ($p = 309$).

Table 1. HCT data.

	OBu	IVBu	Global	p
N	23	43	66	
Age	23 (21-62)	39 (8-71)	45 (8-71)	0.08
Graft Failure	1 (4,3%)	3 (7%)	4 (6%)	0.56
Neutrophil recovery (days)	17 (8-42)	17 (0-61)	17 (0-61)	0.95
Platelet recovery (days)	22 (11-77)	20 (0-116)	21 (0-116)	0.04
GVHD Acute	6 (26%)	9 (21%)	23 %	0.42
GVHD Chronic	4 (17%)	13 (30%)	26%	0.20
EVOH	5 (21%)	3 (7%)	8 (12 %)	0.08
Hepatotoxicity	9 (47%)	6 (27%)	15 (23%)	0.20
Relapse	3 (13%)	12 (28%)	15 (23%)	0.20
Death	14 (60%)	21 (48%)	35 (53%)	0.44
Progression	3 (13%)	9 (21%)	12 (18%)	0.37
GVHD	4 (17%)	4 (9%)	8 (12%)	0.37
Infection	4 (17%)	4 (9%)	9 (14%)	0.37
EVOH	2 (8%)	1 (2%)	3 (4%)	0.37

Univariate Chi-Square Test.

Relapse rate (28%) and non-related relapse toxicity (20%) do not be higher than what we had observed with the standard regimen with OBu (13% and 42% respectively).

Conclusions: Intravenous Busulfan is an effective drug in both regimens for patients with acute leukemia. Mortality related to relapse and toxicity do not appear to be higher than those observed with oral Busulfan regimens.

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INCIDENCE AND CLINICAL FEATURES OF IDIOPATHIC PNEUMONIA SYNDROME AND DIFFUSE ALVEOLAR HEMORRHAGE AFTER UNRELATED CORD BLOOD TRANSPLANTATION

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Background: Idiopathic pneumonia syndrome (IPS) and diffuse alveolar hemorrhage (DAH) are non-infectious pulmonary complications of hematopoietic stem cell transplantation (HSCT) with unclear pathogenesis and treatment.

Objective and method: To investigate the incidence and clinical features of IPS/DAH after unrelated cord blood transplantation (uCBT), we retrospectively analyzed 370 patients underwent uCBT from January 2005 to June 2010 at Toranomon Hospital. Diagnosis of IPS/DAH was made by multilobar infiltrates on CXR or CT, clinical signs of pneumonia: cough, dyspnea, or rales, abnormal physiology: increased arterial-alveolar oxygen gradient, or the need for supplemental oxygen support, and no evidence of respiratory tract infection.

Result: Twenty five cases of IPS/DAH were identified, with incidence of 6.8%. The median-age was 59 years (range; 26-72). Nineteen patients underwent transplantation for leukemia, 4 for malignant lymphoma, and 2 for aplastic anemia. IPS/DAH was diagnosed at a median of 34 days (range; 8-93) after uCBT. All patients were administered mPSL therapy. Nine of 25 patients were administered etanercept combined with mPSL pulse therapy. Five of 9 had not responded, while 4 responders had worse their respiratory condition after discontinuation of etanercept therapy. Twenty four of 25 died of respiratory failure.

Conclusion: IPS /DAH after uCBT are fetal pulmonary complications. It is suggested that the incidence of IPS/DAH after uCBT appears similar to that observed after transplantation using other sources. But our results suggested that the existing treatment such as etanercept combined mPSL pulse have only limited efficacy as a therapy for IPS/DAH after uCBT. Further research is needed to characterize the condition of this syndrome and to investigate the optimal therapy and prophylaxis.