dose is critical for UCBT. Previously mortality risks outweigh benefits in using UCBT for thalassemia. With strategies that maximize cell dose – using non-red cell reduced but plasma depleted (PD) CB, no post-thaw wash (NW), and double cord transplantation (DCT) – promising results may be achieved with UCBT in young thalassemics. Between 7/2001 and 1/2006, 63 CB products were infused after Bu/Cy/ATG myeloablation in 51 pediatric thalassemia major patients (11 DCT & 1 re-transplant) at 14 transplant centers (TC) using 82% PD CB with 92% NW. Patient status: 20 Pesaro class 1, 11 class 2, 1 class 3, and 19 status unknown. Median age was 4.3 years (range 0.3–20 years) with a median weight of 17 kg (range 4–45 kg). The data was audited by TC, NMDP and on-site by CIBMTR with 97.3% accuracy. No significant adverse events were observed despite major ABO incompatibility in some cases and NW. Cumulative incidence estimates of neutrophil (ANC500), platelet 20K and platelet 50K (plt 20 & 50K) engraftment with donor chimerism were 86 ± 8%, 74 ± 9% and 74 ± 9%, and median times to ANC500, plt 20K and 50K engraftment were 17 days (range 11–32), 40 days (range 16–135) and 60 days (range 30–144) after transplantation respectively. 7 patients died including 2 deaths prior to day 20 and one due to traumatic head injury. 42 patients engrafted, 9 with autologous recovery, and 38 patients are alive with a mean and median follow up time of 537 and 296 days respectively (range 8–2,691 days) as of May 2007. Results appear to show improvement with TC experience TC (>5 cases of UCBT for thalassemia) and NW. Patients receiving PD versus red cell depletion (RCD) CB were compared by matched-pair analyses where patients were matched by TC experience, wash status, age, weight, TNC dose, and #HLA matches (Paired Prentice-Wilcoxon Test). The results (table) showed fewer autologous recovery ($p = 0.04$) and better thalassemia-free survival (DFS; $p = 0.01$) for PD compared to RCD patients. Overall survival (OS) and transplant-related mortality (TRM) also trended in favor of PD patients (both $p = 0.08$). To our knowledge, this is the largest multi-institutional UCBT series for thalassemia and demonstrate that at experienced TC, 93 ± 6% ANC engraftment and 88 ± 8% 1-year DFS are attainable, when cell dose is optimized with PD CBU, no post-thaw wash and DBT when necessary.

	ANC500	Plt 50 K	Autologous Recovery	TRM	OS	DFS
P-value	**NS**	**NS**	**0.04**	**0.08**	**0.08**	**0.01**
In favor of			**PD**	**PD**	**PD**	**PD**

NS = Not Significant.

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THE OUTCOME OF ALLOGENEIC STEM CELL TRANSPLANTATION (AlloSCT) FOR THE TREATMENT OF THERAPY-RELATED MYELODYSPLASTIC SYNDROME (tMDS) AND ACUTE MYELOID LEUKEMIA (tAML) VARIES CONSIDERABLY BY RISK FACTOR: AN OBSERVATIONAL STUDY FROM THE CENTER FOR INTERNATIONAL BLOOD AND MARROW TRANSPLANT RESEARCH (CIBMTR)

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We report outcomes of alloSCT for tMDS and tAML in 868 subjects transplanted between 1990 and 2004 at 211 centers in 33 countries. 21% were ≤19 years old (yo); 55% were female and 63% had tAML (including 30% with prior tMDS). Prior treatment was chemotherapy in 43%, chemotherapy and radiation therapy in 51% and radiation therapy alone in 4%. Prior diagnoses included Hodgkin lymphoma (23%) and non-Hodgkin lymphoma (21%), breast cancer (16%), ALL (12%), sarcoma (8%), germ cell tumor (6%), and autoimmune disorders (5%). Cytogenetic data (cd) at the time of transplant were known in 84%: good prognosis 4%, intermediate 61% and poor 34%. The IPSS score at diagnosis for subjects with tMDS was intermediate-2 or high in 54%. At transplant, 51% of subjects with tAML were in first complete remission (CR1), 7% ≥ CR2, 15% in relapse and 27% were primary induction failures. For the tMDS pts, 37% had been treated with other modalities before receiving an alloSCT. Pre-transplant conditioning regimen was myeloablative (M) 77% and reduced intensity (RI or non-M) in the remainder. Donors were related 38% and unrelated 62%; 66% of the grafts were bone marrow and 34% peripheral blood stem cells. Cumulative incidence of acute GVHD (grade II-IV) @100 days was 39% (95% confidence interval [CI]), 35–42). Outcomes, with a median follow-up of 61 (range, 3–187) months were: In multivariate analysis (MVA), DFS and OS were lower in subjects >35 yo, with poor prognosis cd, AML not in CR or untreated MDS, or with a mismatched related or unrelated donor. The use of a RI or non-M conditioning regimen did not improve outcomes in the MVA. Survival was significantly better in pts <35 yo, with good or intermediate risk cd, disease control at the time of transplant and having a matched related or complete or partially matched-unrelated donor. The 5 year survival was 50% (95% CI, 39–61) with all 4 good risk factors (grf); 25% (95% CI, 20–31) with any 3 grf, 19% (95% CI, 14–24) with any 2 grf, 12% (95% CI, 8–18) with only 1 grf, and only 4% (95% CI, 0–15) without any of these factors. In conclusion, easily identifiable risk factors predict outcome after alloSCT for tMDS and tAML.

Outcome:	5 year probability (95% CI)
Chronic GVHD	**30 (27–33)**
Treatment-related mortality (TRM)	**48 (44–51)**
Relapse	**31 (28–34)**
Disease-free survival (DFS)	**21 (18–24)**
Overall survival (OS)	**22 (19–26)**

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UNRELATED CORD BLOOD TRANSPLANTATION AFTER MYELOABLATIVE CONDITIONING IN 98 ADULT PATIENTS WITH ACUTE LEUKEMIA: A SINGLE-INSTITUTE EXPERIENCE IN JAPAN

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We analyzed outcomes and risk factors after unrelated cord blood transplantation (CBT) for 98 adult patients with acute leukemia. Between August 1998 and June 2007, 98 adult patients with acute leukemia were treated with unrelated CBT at The Institute of Medical Science, University of Tokyo. Diagnoses at transplantation included de novo AML (n = 55), ALL (n = 25), and MDS-related secondary AML (n = 18). 59 (60%) patients were transplanted in an advanced status of the disease (defined as acute leukemia in third or subsequent complete remission, not in remission, or with high-risk cytogenetics). All patients received four fractionated 12 Gy total body irradiation and chemotherapy as myeloablative conditioning. 95 patients received standard cyclosporine (CyA) and methotrexate, and 3 patients received CyA only as a graft-versus-host disease (GVHD) prophylaxis. Among the patients the median age was 40 years (range, 18–55 years), the median weight was 56 kg (range, 36–76 kg), the median number of cryopreserved nucleated cells was 2.46×10^7/kg (range, $1.16–5.29 \times 10^7$/kg) and the median number of cryopreserved CD34 positive cells was 0.93×10^5/kg (range, $0.15–8.97 \times 10^5$/kg). 92 patients had myeloid reconstitution and the median time to more than 0.5×10^9/L absolute neutrophil count was 21 days. A higher CD34 positive cell count was independently associated with faster neutrophil recovery ($p = 0.0001$). A self-sustained platelet count more than 50×10^9/L was achieved in 86 patients at a median time of 42 days. Acute GVHD greater than or equal to grade III occurred in 6 of 92 evaluable patients and chronic GVHD occurred in 67 of 84 evaluable patients. Among 67 chronic GVHD patients, 19 patients were extensive type. 69 patients are alive and free of disease at between 116 and 3322 days after CBT. With a median follow-up of 1677 days, the probability of disease-free survival (DFS) at 5 years was 68.5 ± 5%. The 5-year