

## Comparison between alemtuzumab and antithymocyte globulin in reduced-intensity stem cell transplantation

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**Background :** T-cell depletion is effective strategy for prevention of GVHD, but it is associated with an increased incidence of graft failure and relapse after RIST. Alemtuzumab (Campath1H) and antithymocyte globulin (ATG) is the most commonly used in T-cell depletion in RIST. However, the chimerism kinetics about Campath1H versus ATG is not elucidated in RIST. **Methods :** Data were collected retrospectively on 30 patients who underwent RIST (Campath1H, n=15; ATG, n=15) between 2003 and 2006. Donors were HLA-identical siblings in 17 patients, matched unrelated donors in 7 patients and others were HLA mismatched unrelated donors. Peripheral blood stem cells served in 18 patients and bone marrow in 12 patients. GVHD prophylaxis consisted in cyclosporine A or tacrolimus. **Results :** Age, gender, disease categories, stem cell sources and donors were not different between two groups. Neutrophil recovery was slower in patients treated with Campath1H (p=0.004) although platelet recovery was not different between two groups. CMV antigenemia developed in eleven patients after Campath1H use and four patients after ATG treatment(p=0.011). However, the incidence of CMV disease was not different between two groups. Graft failure rate was not different. ATG group showed the increased rate of grade III-IV acute GVHD and chronic GVHD although there was no statistical difference. Also, even with the difference of infused T-cell dose, T-cell donor chimerism within first month was reported to be delayed in ATG conditioning compared to Campath1H use. On day 14, donor chimerism of T cells was 87.4% and 52.5% in patients with Campath1H and ATG, respectively (p=0.012). Similar results were obtained on day 28. T-cell donor chimerism was 78.7% and 50.2% (p=0.06) in patients with Campath1H and ATG, respectively. During 100 days, TRM is 2/15 after ATG treatment because of acute GVHD and infectious cause. Overall survival (OS) and Disease free survival (DFS) at 1 years was 47.2%, 62.5% in Campath1H group, 47.2%, 57.4% in ATG group respectively. **Conclusion :** Our study indicates that Campath1H may offer an effective degree of T-cell depletion without relapse or TRM. Large prospective studies are required to reveal the role of Campath1H.

## Reduced-intensity stem cell transplantation in adults with acute lymphoblastic leukemia

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**Background :** The prognosis for adult acute lymphocytic leukemia (ALL) remains unsatisfactory because of recurrence. For ALL, dose intensive conditioning regimens were usually used following stem cell transplantation. However, its long term survival at 5yr was about 30% due to frequent relapse and treatment related mortalities(TRM). In this study, we studied the clinical effects of reduced intensity conditioning (RIST) in ALL compared with myeloablative (MA) intensity regimens. **Patients and Methods :** We retrospectively evaluated 40 adult ALL patients who had taken allogeneic HSCT from 2000 to 2006. 27 patients were received total body irradiation and cyclophosphamide as MA conditioning chemotherapy. Fludarabine based reduced intensity conditioning regimens were used in 13 patients. **Results :** Median follow-up day was 357 days (range 16-2,524 days). No differences were observed between two groups according to sex, age, and the proportion of high risk patients. However, peripheral blood was preferred as stem cell source and infused stem cell counts were higher in RIST group (3.8x10<sup>6</sup>/kg vs. 9.9x10<sup>6</sup>/kg, P<0.001). TRM didn't show a statistical difference, however transfusion requirements were much higher in MA group (RBC, 3 unit (range, 0-19 units) vs. 0 unit (0-4 units), P=0.039; platelet, 13 units (range, 0-51 units) vs. 2 units (0-7 units), P=0.014 respectively). Acute GVHD grade II-IV was less detected in RIST group (52% vs 23%, P=0.053), which wasn't associated with survival benefit. In contrast, although there was no statistical difference in the incidence of chronic GVHD, it was strongly associated with a lower relapse rate and prolonged survival(EFS at 5 years, 59% vs.0%, P=0.002; OS at 5 years 80% vs 37%, P=0.04). Event-free survival (EFS) at 5 years was 24% for MA group and 32% for RIST group (P=0.39) and overall survival (OS) at 5 years was 48% for MA group and 26% for RIST group (P=0.86). In high risk patients, there were no significant differences in OS and EFS at 5 years (41% vs.23% P=0.65; 18% vs.39%, P=0.27 respectively). **Conclusions :** Our study's results suggested the presence of a graft versus leukemia effect for ALL and RIST for adult ALL is worth considering for further evaluation.