To evaluate longtime survival after matched unrelated donor (MUD) transplantation a group of patients (n = 10) with intensified GVHD prophylaxis were compared to patients receiving matched sibling (MSD) transplantation (n = 10); all transplantations were done between 1989 and 1995 in the same institution. A murine monoclonal antibody against CD25 was assessed in addition to standard GVHD prophylaxis for reducing GVHD in children with advanced leukemia after MUD BMT (group I). We compared the incidence of GVHD, relapse and survival under prophylaxis with either anti-CD25 (group I, n = 10) or MSD BMT without anti-CD25 (group II, n = 10) with respect to known risk factors of transplant related morbidity, mortality and outcome. 3/10 leukemia patients in both groups were in CR3 or in relapse at time of transplant. Whereas incidence of acute GVHD grade III and IV was significantly higher in group I compared to group II (0.4 vs. 0.0), no differences in engraftment, or chronic GVHD were seen between both groups. In addition, overall (0.5 vs. 0.6) and leukemia free survival (0.5 vs. 0.6) was not different after 8 respectively 10 years from transplant. Murine anti-CD25 therapy may have contributed to matching outcome of MUD vs. MSD marrow transplants in children with advanced leukemia. In conclusion, the use of anti-CD25 in modulation of CD25+ regulatory and
effector T cells in allo- and leukemia recognition merits further exploration of its potential to improve both tolerance and leukemia control. Since the outcome of children with leukemia that received intensified GVHD prophylaxis in MUD BMT was similar to children with MSD transplants, MUD BMT has to be considered as an equivalent therapeutic option for patients, who have no HLA-identical sibling donor.