# Zalyalov et al. (Abstract)

Cellular Therapy and Transplantation (CTT), Vol. 2, No. 5, 2009
doi: 10.3205/ctt-2009-No5-abstract24


Abstract accepted for "Joint EBMT Pediatric Working Party – 3rd Raisa Gorbacheva Memorial Meeting on Hematopoietic Stem Cell Transplantation", Saint Petersburg, Russia, September 17–20, 2009

pdf version

## Thymoglobulin and ATGAM for prevention of posttransplant complications after HLA-mismatched allogeneic SCT

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### Abstract

Allogeneic stem cell transplantation (allo-SCT) is an important therapeutical approach for patients with different malignant and non–malignant disorders. However, the failure to find a proper donor match for all recipients restricts the procedure in most cases due to higher graft-*versus*-host disease (GVHD) rates. Currently, reports comparing the clinical efficacy of different antithymocyte globulin (ATG) brands regarding their post–transplant prophylaxis value after allo-SCT from HLA-mismatched donors are limited. In this report we have evaluated the outcomes of 24 patients with different hematological malignancies who underwent unrelated SCTs during a period from 2005 to 2008.

The patients' median age was 15 years (range, 1–48). All transplants had been performed with unrelated grafts carrying one or more mismatches in HLA-A, -B, -C, -DRB1, -DQB1 loci. The post–transplant prophylactic regimens were based on a combination of either cyclosporine A with methotrexate or CellCept with tacrolimus. All transplanted patients received peripheral blood stem cells as stem cell source. The median $CD34^+$ cell dose was 6.6 $x10^6$/kg bw (range, 1–18). Myeloablative and nonmyeloablative preparative conditioning had been used in 37% and 63% of all transplants, respectively. Depending on the brand of ATG being used, all patients were subdivided in two groups. The first group (n=7) received thymoglobulin (cum. dose 7.5 mg/kg), while the second group (n=17) ATGAM (cum. dose 60 mg/kg). Both groups were comparable concerning the sex and AB0–blood group mismatch between donor and recipient.

Neutrophil engraftment rates were similar in both groups: day +15 (range, 13–25) in the thymoglobulin group and day +16 (range, 11–22) in the ATGAM group. All the patients had been successfully engrafted. The trend towards lower acute GVHD II–IV rate had been more noticeably observed in the thymoglobulin group compared to the ATGAM group (28% vs. 70%; p=0.06). The risk of extensive chronic GVHD was also lower in the thymoglobulin group (28% vs. 78%; p=0.05). Overall survival for 1 year (71% vs. 47%; p=0.6) and 1-year TRM (15% vs. 48%; p=0.2) seemed to be better in patients who received thymoglobulin.

In conclusion, our study suggests that the use of thymoglobulin as a post–transplant prophylaxis could be associated with lower acute and/or chronic GVHD rates as well as with better outcomes in recipients of allo-SCT from mismatched unrelated donors as compared to ATGAM.

**Keywords:** GVHD, thymoglobulin, ATGAM, allo-SCT

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