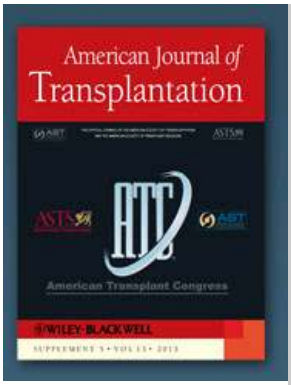
# American Transplant Congress

## Meeting Abstracts






## 2013 ATC Abstracts

# Comparison of Baseline and Day 28 Post Transplant Renal Allograft Samples from the CTOT-10 Belatacept Study

*Y. Suessmuth, L. Stempora, B. Johnson, J. Cheeseman, Y. Morrison, N. Bridges, D. Ikle, S. Tomlanovich, P. Stock, R. Mannon, K. Newell, C. Larsen, A. Mehta*

Emory Transplant Center, Atlanta; Univ of Alabama-Birmingham, Birmingham; Univ of California San Francisco, San Francisco; NIAID/NIH, Bethesda; Rho, Chapel Hill, NC

**Abstract number:** A630



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The purpose of the CTOT-10 study is to evaluate belatacept as maintenance therapy, while minimizing calcineurin inhibitors and corticosteroids in renal transplantation. We designed mechanistic studies to ascertain the effects of long term belatacept on immune phenotypes and function.

Participants were randomized to one of three study arms. Patients in all groups received perioperative steroids and maintenance MMF. Groups 1 (N=3) and 2 (N=2) received alemtuzumab induction with maintenance tacrolimus or belatacept respectively. Group 3 (N=5) received basiliximab induction, 3 months of tacrolimus and maintenance belatacept. Peripheral blood was collected on Day 0 and 28 post-transplant. Phenotypic characterization of PBMCs was performed using flow

cytometric assessment of memory, differentiation, activation and exhaustion.



CD8 T cells from alemtuzumab depleted samples showed a strong skewing toward an effector memory RA phenotype, increasing from 14% at baseline to 45% at day 28. Group 2 also exhibited a 14% increase of PD1+ cells (a marker of exhaustion) whereas Group 1 showed a 16% increase of CD57+ cells (a marker of senescence). Interestingly non-depleted patients maintained a PD1-/CD57- phenotype. At day 28, cells of depleted patients (Groups 1&2) were more differentiated (CD27lo, CD28lo) and more activated (HLA-DR+/CD38+). Not surprisingly, we found a significant increase in recent thymic emigrants (RTE) in depleted compared to non-depleted samples. Interestingly Group 1 exhibited higher frequencies of CD4+ RTE, while Group 2 showed a dramatic increase in CD8+ RTE.

In summary, we report here preliminary findings from the CTOT-10 trial comparing alemtuzumab depleted and non-depleted patients. Though limited by small numbers, we found that alemtuzumab treated patients show a more differentiated lymphocyte phenotype compared to non-depleted subjects. Depleted tacrolimus treated patients exhibit a potentially more senescent phenotype compared to depleted belatacept treated cells, which appear to be more exhausted. Further phenotypical and functional studies of longitudinal samples with higher patient numbers are needed to determine the potential clinical and immunological ramifications of these observations.

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