

CCR4highCD4+ Cell populations in Kidney Graft Blood after Steroid Withdrawal: a prospective, randomized, controlled, parallel group study. Preliminary results

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INTRODUCTION

Steroids represent a mainstay of immunosuppression after kidney transplant (KT). The infiltration into the graft of active T cells following KT depends on the expression of chemokines and their interaction with their T-cell receptors. However, the natural history of the expression of these molecules in patients who undergo steroid withdrawal after transplant is unknown.

RESULTS

So far, 68 patients have been randomized (34 in each group). There were no significant differences in the clinical and demographic characteristics between the groups at baseline. The first analysis (at 3 months) in those patients who had completed 6 months of follow-up (Group A: n=13; Group B: n=15) showed a significant increase in the CCR4highCD4+ subpopulations in GB versus PB in both groups. However, at six months a significant increase in GB versus PB was only seen in Group A. There were no significant differences in the CXCR3highCD4+ lymphocyte subpopulation at the third or sixth month between GB and PB in either group (Table).

MATERIAL AND METHODS

- Controlled clinical trial (NCT02284464).
- Patients: 176 KT patients with low immunological risk.
- Randomized at 3 months post-KT:
 - Group A: steroids, TAC and MMF.
 - Group B: steroid withdrawal at the third post-KT month.
- Lymphocyte subpopulations: CCR4highCD4+ and CXCR3highCD4+.
- Aim: To compare the evolution of CCR4highCD4+ and CXCR3highCD4+ lymphocyte subpopulations in graft blood (GB) extracted by fine needle aspiration puncture determined by flow cytometry in patients after steroid withdrawal at the 3 month post-KT (Group B) versus patients who continue to receive conventional triple immunosuppression (Group A).
- Measurements at 3 (baseline) and 6 months post-KT in GB and in peripheral blood (PB).

Table 1. Evolution of CCR4highCD4+ and CXCR3highCD4+ lymphocyte subpopulations.

	Group A			Group B		
	PB	GB	P	PB	GB	P
CCR4highCD4+ (%)						
3 months	0.40±0.34	2.28±2.46	0.001	0.45±0.64	2.09±3.84	0.003
6 months	0.42±0.57	2.97±5.35	0.023	0.71±0.81	1.27±1.43	0.117
CXCR3highCD4+ (%)						
3 months	0.78±1.54	0.82±1.30	0.950	0.72±1.34	0.50±0.92	0.567
6 months	0.99±1.73	1.63±4.64	0.423	2.82±4.70	1.05±1.55	0.063

Group A: Tacrolimus+MMF+steroids; Group B: Tacrolimus+MMF; PB: peripheral blood; GB: graft blood.

CONCLUSION

These preliminary results could suggest a possible effect of prednisone that would favor the recruitment of CCR4highCD4+ cells into the renal graft. The effect of prednisone on the CCR4highCD4+ tolerogenic subpopulations is unknown. Additional studies are needed to determine the role of prednisone in these tolerogenic subpopulations in the renal graft.