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2298 PROSPECTIVE ANALYSIS OF THE IMMUNOLOGIC PROFILE OF A HAND TRANSPLANT RECIPIENT IN THE FIRST YEAR

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Introduction: A major obstacle to the wider application of hand transplantation is the long term complications associated with immunosuppression. Minimization of immunosuppression is an important goal in all transplant recipients. Currently there are no accurate tools to evaluate the immunological responsiveness which might help tailor the level of immunosuppression for an individual patient. The response of recipient lymphocytes to PHA, Candida, and alloantigen may represent laboratory tool towards this end. It has been reported that these 3 responses are hierarchical with response to alloantigen being the first to be lost, followed by Candida and finally PHA.

Patient & Method: A 54 year old male received a proximal forearm transplant in November 2006. Immunosuppression included induction with a single 30 mg dose of alemtuzumab and maintenance with tacrolimus and mycophenolate mofetil (MMF). Six weeks post-transplant Valganciclovir, Bactrim and MMF were stopped due to neutropenia. The patient developed an episode of cytomegalovirus infection during the third post-operative month. This was successfully treated with intravenous Ganciclovir and topical acyclovir & steroids respectively. Blood samples were drawn at selected time points and subjected to phenotyping of lymphocyte subsets and immune monitoring for circulating peripheral blood regulatory T cells (Treg) and proliferative responses to phytohemagglutinin (PHA), Candida, and alloantigen.

Results: Alemtuzumab induction resulted in profound lymphopenia. At week 2 and 3 month, the response to PHA was intact (stimulation index 110 and 24 respectively), but response to alloantigen and Candida suppressed (SI < 3). A similar immunologic profile persisted up through 6 months. At 1 year, the PHA and Candida responses are robust (SI 69 and 38 respectively), but alloresponses have not returned. Current immunosuppression consists of tacrolimus (5-9 ng/ml) and mycophenolate mofetil (500 mg b.i.d.). There is no gross evidence of acute or chronic rejection.

Conclusions: Induction with alemtuzumab alters the recovery of immune response: recovery to Candida was delayed beyond 6 months and to alloantigen beyond a year. It is interesting to note that despite severe neutropenia and a lack of response to alloantigen and Candida, acute rejection still occurred in the first month. However, the rejection was easily reversed with topical agents. Immune response monitoring combined with clinical findings could help tailor immunosuppression to individual patients.

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2299 MONITORING OF THE FIRST FACE GRAFTED PATIENT, WITH FOXP3, PERFORIN, CCR4, CLA AND CD82 mRNA IN BLOOD AND GRAFT DEMONSTRATES DIFFERENTIAL CHANGES IN REJECTION VERSUS VIRAL INFECTION EPISODES

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Introduction: Most regulatory T cells are known to express FoxP3, but also skin homing receptors such as CCR4 and CLA.

Methods: PBMCs were collected at different time-points post-transplantation.

Biopsies were performed in the right and left oral mucosa, or in the piece of vascularized skin that has been grafted together with the face, as sentinel. The levels of FoxP3, Perforin, CCR4, CLA mRNA and CD82, were measured by Q-RT-PCR.

Results: During the first year post-transplantation, two rejection episodes were observed in our patient. The second episode occurred one month after a sub-clinical CMV reactivation and local herpes infection. Inside the graft, two weeks post-transplantation, there was no detectable levels of CD45RO mRNA, indicating no T cell infiltration. During rejection episodes, CD3, FoxP3 and Perforin mRNA levels increased inside graft and sentinel skin, but not in blood. While FoxP3 mRNA levels were sustained, those of Perforin were transient. During the viral infection episode, Perforin mRNA levels strongly increased in peripheral blood, right mucosa and sentinel skin. However, at the same period, FoxP3 mRNA levels, which also increased in blood, dramatically decreased in the sentinel skin and the right mucosa. The kinetics of CCR4 and CLA mRNA levels followed that of FoxP3 but not that of Perforin. CD82, which binds to CLA, followed the same kinetics, as opposed with CXCR1, which was used as a negative control.

Conclusion: We show here that upon rejection episodes both FoxP3 and Perforin mRNA levels were increased inside graft. But, during systemic viral infection, a dissociation was observed since FoxP3 profoundly decreased from graft, while Perforin mRNA levels increased. Kinetics of expression of CCR4 and CLA mRNAs followed that of FoxP3, but not of Perforin. Our results suggest that the dysregulation of the effectors/Tregs balance, observed inside graft during the infection episode, could account for the occurrence of the second rejection episode.

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2300 TC-99M SESTAMIBI ACCURACY IN DETECTING PARATHYROID TISSUE IS INCREASED WHEN COMBINED WITH PREOPERATIVE LABORATORY VALUES. A RETROSPECTIVE STUDY IN 463 GREEK PATIENTS WITH CHRONIC RENAL FAILURE WHO UNDERWENT PARATHYROIDECTOMY

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Purpose: Technetium-99m sestamibi (MIBI) has poor sensitivity and specificity when applied to patients with secondary hyperparathyroidism. We investigate whether the combination of MIBI with preoperative parameters increases its accuracy.

Patients and Methods: This is a prospective study of 463 consecutive patients with secondary hyperparathyroidism who underwent parathyroidectomy (bilateral neck exploration). All of them underwent preoperative MIBI scintigraphy. MIBI readings were compared with intraoperative and histopathologic findings and four patient groups were comprised according to the results: TP group for true positivity, TN group for true negativity, FP group for false positivity and FN group for false negativity.

Results: MIBI scintigraphy sensitivity, specificity, positive predictive value and negative predictive value were 66.4%, 50%, 76.3% and 37.9% respectively. For the TP group, mean age and mean parathormone (PTH) value were 56 and 754 respectively. The binary logistic regression for the prediction (1) or no (2) of the true positivity was: $0.138 + (-.011) * \text{age} + 0.006 * \text{PTH}$ ($p = .012$). For the TN group, mean age and mean phosphate value were 49 and 5.24 respectively. The binary logistic regression for the prediction (1) or no (2) of the true negativity was: $-1.463 + \text{age} * (-.029) + \text{phosphate} * 0.253$ ($p = .012$).

Conclusion: MIBI accuracy in patients with secondary hyperparathyroidism is increased when combined with other preoperative parameters. The sensitivity is increased to patients get older and the PTH levels get lower. The specificity is increased to patients get younger and the phosphate levels get lower.