

VASCULAR INJURY IN ACUTE RENAL REJECTION: ASSOCIATION TO C4d STAINING AND KIDNEY GRAFT SURVIVAL

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OBJECTIVES: We carried out a retrospective study of the vascular injuries found in kidney post-transplant biopsies performed by renal dysfunction, to try to analyse the association between C4d positive, histological patterns, response to the treatment and graft survival.

METHODS: We reviewed 184 biopsies performed by creatinine increase in 571 transplants from January, 1997 to December 2006. Twenty seven of these biopsies presented different degrees of vascular damage (VD). The biopsies were classified in agreement to Banff updated criteria for antibody-mediated rejection. The determination of C4d was performed on paraffin sections by polyclonal antibody by means immunoperoxidase technique. The donor-specific-antibodies (DSA) were detected by flow cytometry in historic and pre and post-transplant sera.

RESULTS: Of the 27 cases with VD, 70 % showed diffuse C4d positive and 55,6 % presented DSA. The inflammatory parietal infiltration was the only expression of vascular injury in 11 cases; the absence of deposits of C4d was observed in 10 ($p < 0,05$) while in only one biopsy, the staining of C4d was diffuse positive presenting a transmural affectation of the vessel. However, when these injuries were associated with acute tubular necrosis (ATN) or thrombosis glomerular, C4d were in 80 % of the cases positive.

The histological pattern of glomerular thrombosis was found in 44 % of the cases, in 50% of them, were found as an isolated injury. The graft survival associated to this finding was significantly lower ($p < 0,05$). The global survival of the graft was 46 % to 30 months with a better survival in patients treated with Thymoglobuline ($p=0,40$), been significant in the group of patients with arteritis.

CONCLUSIONS: 1. The association between arteritis and C4d positive deposits is only significant when the arteritis is joined to other histological patterns of humoral rejection. The treatment with Thymoglobuline improved the allograft survival in those cases. 2. The glomerular thrombosis (HUS - like) is the histological pattern of worse prognosis and the most selectively associated with antibody-mediated rejection.