IMMUNOPHENOTYPE OF INFLAMATORY CELLS OF RENAL ALLOGRAFT BIOPSIES WITH ACUTE CELLULAR REJECTION

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INTRODUCTION: Acute cell mediated rejection is the form of rejection that develops most commonly in the first few weeks after the transplantation in kidney transplant and its frequency declines after the first 6 months. The composition of the tubulointerstitial or vascular inflammatory infiltrate in acute cell rejection is mixed, predominantly T-lymphocytes (CD4 or CD8) but macrophages, plasma cell, granulocytes and NK cells can be present.

OBJECTIVES: Identify and measure average per high power field of plasma cell, macrophages, mast cells, eosinophils, and CD4 and CD8 T-lymphocytes in 6 months post-transplant biopsies with acute cell rejection, and correlate with HLA disparities, clinical course, response to therapy and evolution and prognosis of allograft.

METHODS: Review of biopsies of kidney transplant with acute cellular rejection in first 6 months post-transplant in our hospital from 1992 to 2003 and measure by inmunohistochemistry the average per high power field (x40) of plasma cells (Monoclonal Mouse Anti-Human CD-138 Clone MI15. DakoCytomation), macrophages (Monoclonal Mouse Anti-Human CD68 Clone PG-M1 DakoCytomation), mast cells (Monoclonal Mouse Anti-Human Mast Cell Tryptase Clone AA1 DakoCytomation), CD4 and CD8 T lymphocytes(Monoclonal Antibody Novocastra Laboratories) and eosinophils by Highmans Congo Red technical. We grade and tabulate the histological findings according Banff score and we review clinical parameters like HLA mismatches, cytotoxic cross-matches, type of immunosuppression, response to anti-rejection therapy and evolution of allograft. Statistical analysis with t-Student, Man-Whitney, X^2, Kaplan-Meier for survival analysis and logistic regression.

RESULTS: We review 46 biopsies obtained from 40 kidney transplants (28 men and 12 women) with a medium age of 48.1 years old (range 20-68). In univariable analysis we found that the number of lymphocytes CD8/high field (>23/field) is the unique histological variable associate with poor allograft survival (X^2=5,5, p=0,03) (survival first year 60% vs 30% Log rank 3,6 p=0,05).

The 45% of cases did not respond to steroid therapy. In univariable analysis the plasma cell/high field (2,6+/-6,1 vs 0,5+/-1,1 p=0,004) macrophages/high field (74+/-28 vs 46+/-34, p=0,01) and CD8 lymphocytes/high field (36+/-21 vs 15+/-13, p=0,007) were correlated with steroid resistant. In multivariable analysis /logistic regression adjusted for plasma cell, macrophages, CD4 and CD8 lymphocytes, a low number of plasma cell/high field is the only variable associate with better allograft survival (Odds=0,12 (ci95% 0,01-0,098) p=0,04) and a high number of plasma cell/high field is associate with steroid resistant (Odds= 4,06 (ci95% 1,05-15) p=0,04).

CONCLUSION: We concluded that presence of plasma cells in acute cellular rejection indicates worse allograft outcome, as others authors showed before[1].
Immunohistochemistry study of type cells present in acute cellular rejection biopsies can help to predict the response to steroid therapy and the outcome of kidney allograft.

References

1.- L. Racusen and al. Transplantation 1999 Vol 68 791-797