

Abstract

After kidney transplantation the recipient's immune system responds to the donor's antigens and the graft rejection occurs. Borderline changes are a frequent diagnosis after kidney transplantation, representing only mild rejection signs. Some patients with borderline changes undergo progression to rejection. The identification of these at-risk patients by biomarkers will allow enhanced treatment and help to prevent the development of rejection.

The aim of my work was to verify biomarkers of rejection in patients with borderline changes. Chemokines CXCL9, CXCL10 and CCL17 in urine/serum of 40 patients with subclinical borderline changes at 3 months and in 25 patients with early borderline changes were determined by ELISA. At 3 months, the higher CXCL10 level predicted rejection with AUC=0.749, p=0.024. High levels of CXCL10 had also been found in patients with BKV infection. We did not confirm the relationship between rejection and the CXCL9 and CCL17. In the early posttransplant period the levels of CXCL10 and CXCL9 were elevated in all patients and therefore couldn't be used to predict rejection. The alloreactivity was examined using IFN- γ ELISPOT (n=38). No association between the frequency of IFN- γ producing cells after stimulation with donor cells or CMV peptides and the development of rejection was found.

CXCL10 in urine is a noninvasive biomarker of the risk of rejection after subclinical borderline changes at 3 months.

Key words Transplantation, borderline changes, ELISPOT, ELISA, IFN- γ , CXCL10, CXCL9, CCL17