

Does pre-transplant in vitro detection of anti-endothelial cell antibodies predict renal allograft outcome?

Amani M Ismail¹, Rasha M Badawi, Amgad E El-Agroudy, Merveet A Mansour

Urology & Nephrology Centre, Mansoura University, Egypt.

PMID: 20306676

Endothelial cells lining the vasculature proved to be the target for immune-mediated assault, conceivably through the so-called anti-endothelial cell antibodies (AECA). The aim of this work was to detect the AECAs, and to show its correlation with kidney allograft rejection and graft survival. The study included 60 patients who underwent live-donor kidney transplantation. Inclusion criteria included: first kidney transplants, PRA titer less than 5%, causes of ESRD not including vasculitis or systemic lupus erythematosus and age >18 years. According to the presence or absence of AECA, patients were classified into two groups: group I consisted of forty patients with positive AECA and group II included twenty patients with negative AECA. Serum creatinine level in the AECA positive group increased significantly at 1 month and 1 year ($p = 0.04$) following renal graft. The overall incidence of acute rejection (AR) was not significantly different in both groups ($P = 0.5$). However, the frequency of AR episodes was observed more in the positive than in the negative AECA group ($P = 0.04$). Chronic rejection was significantly higher in patients with positive than in the negative AECA group, 15% vs. 5% ($P = 0.03$). Differences in graft survival were found to be 91% vs. 100% after 1-year and after 5-years 84% vs. 91% ($P = 0.04$) in the AECA positive and negative groups respectively. In conclusions, our results suggest that the presence of a significant association between the occurrence of AECAs and multiple graft rejection and inferior long-term graft survival in kidney transplants. Testing for AECA prior to kidney grafting would be informative in identifying patients at high risk for immunological graft loss.