

A secondary data analysis of the impact of rejection on the long-term outcomes of human leukocyte antigen antibody incompatible renal transplantations

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Graft rejection, especially antibody-mediated rejection is one of the major risks associated with human leukocyte antigen antibody incompatible renal transplantations. To curtail the risks and achieve positive long-term outcomes, transplant centres across the world have employed various desensitization protocols as well as induction and maintenance therapy regimens. Thus, the purpose of this study was to analyse the outcomes of rejection in patients who had HLA incompatible renal transplantation in order to aid in the understanding and accomplishment of better transplantation outcomes.

Anonymized clinical data of 130 patients who had HLA incompatible renal transplantations from 2003 -2018 were assessed retrospectively. The graft survival outcome was compared based on the occurrence of rejection. The graft survival outcome was further analysed based on; a) the type of rejection i.e. antibody-mediated rejection, cellular rejection and mixed rejection b) timing of rejection i.e. rejection occurring within the first two weeks of transplantation, after the first two weeks of transplantation and both within and after the first two weeks of transplantation c) the frequency of rejection. Kaplan Meir's death censored survival analysis was used to estimate survival outcomes.

A total of 43 patients experienced rejection. At 10 years the graft survival of patients who had evidence of rejection (52.7%) was significantly lower than those who did not have rejection (82.3%); $p = 0.015$. Antibody-mediated rejection (AMR) was found to be the most frequent type of rejection occurring in 33 out of the 43 patients that had rejection. AMR was also the only rejection type that caused a significant decline in graft survival by 10 years $p < 0.001$. Rejection that occurred after the first two weeks of transplantation or both within and after the first two weeks of transplantation caused a significant reduction in graft survival of patients $p < 0.05$. Experiencing more than 1 rejection episode was associated with a significant decrease in graft survival $p < 0.01$.

The findings of this study showed that rejection, particularly antibody-mediated rejection, continues to remain a major barrier to long term successful outcomes in HLA incompatible renal transplantations.