

Treatment Strategies for Antibody Mediated Rejection in Kidney Transplantation

Plain Language Summary

Kidney transplantation is regarded as the best form of renal replacement therapy in patients suffering from end-stage kidney disease as it conveys better survival and quality of life when compared to dialysis. In Malta, we perform between 20 and 25 kidney transplants every year. Kidney transplantation has always been my special interest in my profession as a nephrologist at Mater Dei Hospital. Having completed my training in nephrology and worked in a tertiary hospital in the United Kingdom, I felt that reading a Masters degree would provide me with the necessary tools to carry out further research in the field of transplantation. I strongly believe that knowledge is the ultimate enabler for change and continued medical research is of chief importance in bringing excellence and innovation to the Maltese Health Care System. The primary aim of this research is to ameliorate the lives of our patients, allowing them to live the kind of life they were used to before developing kidney failure.

Antibody mediated rejection is an insidious type of rejection that occurs when a transplanted kidney is rejected by the patient's immune system, with subsequent kidney failure leading to decreased patient survival. At present this type of rejection remains accountable for the vast majority of kidney transplant failures following the first year of transplantation. Considering this, the primary objective of my research was to evaluate and critically appraise the published literature on the treatment options of antibody mediated rejection. The systematic review and meta-analysis was conducted in adherence to international guidelines, ensuring complete and transparent reporting, whilst providing reliable findings from which robust conclusions can be drawn. The research was conducted using a number of medical databases and included any kidney transplant study conducted over the last 20 years which investigated potential treatment options for antibody mediated rejection and at least provided one outcome measure. Strict inclusion and exclusion criteria were applied to ensure a non-biased investigation. Subsequently, all relevant data was extracted and analysed using meta-analytical statistics.

Thousands of articles were initially screened to ultimately identify 27 eligible studies which were included in this analysis. Together these studies included a total of 1,237 transplant recipients. After evaluating and critically appraising the treatment options portrayed in these studies, it was concluded that treatment with a combination of Rituximab in addition to plasmapheresis and intravenous immunoglobulin seems to be associated with better transplant survival in the early phase (acute) of antibody mediated rejection. However, treatment does not seem beneficial when attempted in the later stages (chronic) of antibody mediated rejection. In this context, late diagnosis of antibody mediated rejection was associated with poor outcomes and kidney transplant failure. These treatment options were generally safe and associated with excellent patient survival. This research uses the current best available evidence to outline potential treatment options for antibody mediated rejection in kidney transplantation. Unfortunately, current evidence is of low-quality and varies considerably between transplant centres. Therefore, further international studies are urgently required to establish the best treatment options in antibody mediated rejection.

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