Kidney transplantation is the treatment of choice for patients with end stage renal failure and is associated with prolonged survival of patients and better quality of life than long-term dialysis. Simultaneously, however, transplantation carries the risk of immunological complications leading to graft rejection. A serious problem in patients after organ transplantation is the development of humoral rejection, which is most often associated with the presence of antibodies specific to HLA antigens, particularly against mismatched HLA antigens of the organ donor. In certain cases antibodies may be specific to antigens expressed on endothelial cells, not on lymphocytes, like MICA, MICB, ICAM, and up till now unidentified tissue-specific antigens. Humoral rejection has significantly worse prognosis for the transplanted kidney than cellular rejection, and therefore its timely diagnosis is of great importance for the subsequent choice of appropriate therapy. The diagnosis of humoral rejection is based on the simultaneous detection of C4d deposits in the peritubular capillaries of the transplanted kidney and the finding of antibodies specific to the mismatched antigens of the donor (donor specific antibodies, DSA).
The aim of our retrospective study was to contribute to improvement of the diagnosis of acute and chronic humoral rejection in kidney transplant patients. Furthermore, our goal was to compare the relevance of different diagnostic methods for the detection and characterization of HLA specific antibodies and to help clarify the clinical relevance of HLA and non HLA specific antibodies as defined by the Luminex method. Our results confirm the clinical significance of antibodies as detected by the Luminex technology before and 3 months after transplantation for the prediction of development of humoral rejection and survival of the transplanted kidney.