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ABO-incompatible kidney transplantations through single membrane filtration plasma exchange using PRISMAFLEX system

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Case Study: In Korea, ABO- incompatible kidney transplantations are increasing so that they account for 20% of all kidney transplantations each year. Recently, a successful ABO incompatible kidney transplantations has been reported with plasma exchange using PRISMAFLEX, continous renal replacement therapy machine. We report five cases of ABO- incompatible kidney transplantations through single membrane filtration plasma exchange using PRISMAFLEX system from July 2019 to December 2019.

The average age of transplant recipients was 44.2 years old, and male to female ratio was 3:2. The underlying diseases of renal failure were three cases of diabetic nephropathy, one case of glomerulonephritis, and one case of unknown cause. Four cases donated from spouse and one from his old brother. The average age of donors was 45.3 years old and the average number of HLA mismatches was 3.4. blood types were two cases of A→B, two cases of B→A, and one case of A→O. A median basal isoagglutinin antibody titer is 1:32 (minimum 1:4 to maximum 1:64). After an average number of 2.8 plasma exchanges, all isoagglutinin antibody titers were significantly decreased (minimum 1:2 to maximum 1:16). Plasma exchange was performed 1.5 times of the total plasma volume. Initially, only 5% albumin was used, and the last preoperative plasma exchange was performed both 5% albumin and fresh frozen plasma at a 1:1 ratio. After the plasma exchange, an injection of 100mg/kg immunoglobulin was performed every time. All transplant recipients received 200mg of rituximab a month prior to transplantation, received simulect injections on the day of surgery and the 4th day after the surgery, and received Tacrolimus/MMF/PL as immunosuppressants. One of the transplant recipient had operation site bleeding and wound infection, and other transplant recipients had no complication associated with operation or total platelet exchange. During up to six months follow-up, creatinine remains stable without any rejection sign.