First Case of Renal Transplantation Involving a Donor with Bombay Phenotype Blood Group

Sir,

Conventionally, renal transplantation is done between ABO compatible blood groups. Blood group O is considered as universal donor. Bombay blood group (Oh phenotype) is a very rare blood group, where anchoring antigen "H" is absent and thus their serum contains anti "H" antibodies. It was originally discovered in India.[1] Its incidence is 1 in 10,000 in India and 1 in 1,000,000 in Western countries.[2] To the best of our knowledge, renal transplantation, involving a donor with Bombay blood group has not been described in the literature in the past though there is a case report, in which donor's blood group is AB para Bombay blood group, which is different from Bombay blood group.[3] Here, we are reporting the first such kind of a case.

Our patient, a 23-year-old female, was a known case of chronic pyelonephritis which had progressed to end-stage renal disease. She was on thrice weekly maintenance hemodialysis for 2 months. She had a history of uncontrolled hypertension and five episodes of status epilepticus, on evaluation diagnosed as posterior reversible encephalopathy syndrome and had been taking the antiepileptic levetiracetam.

In view of the recurrent episodes of status epilepticus and uncontrolled hypertension that were life-threatening, she was evaluated for priority, live-related renal transplantation. Her blood group was "B" Rh +ve. Her father was diagnosed with diabetes mellitus, and the husband's blood group was "A" Rh +ve. Mother was found to have the Bombay blood group. We searched the literature for transplants involving donors with Bombay blood group but were unable to find any.

As "H" antigen is absent in individuals with Bombay blood group, formation of immune complexes, and occurrence of rejection are unlikely, according to Landsteiner's principle[4] of blood group compatibility, after transplanting the kidney from Bombay blood group person to any other blood group person. Before transplantation, the complement-dependent cytotoxicity crossmatch was negative, and donor-specific antibodies were negative. No induction was given, and desensitization was not done in the pretransplant period. The renal transplant was done without any immediate complications, and the patient was started on triple immune suppression with tacrolimus/mycophenolate mofetil and steroid.

In the posttransplantation period, she achieved immediate graft function. After attaining the graft function, blood pressure was well controlled, with minimal dose of calcium channel blocker. She received two units of packed cell transfusion, within the posttransplant period, without any adverse events. She was discharged on postoperative day 10 in stable condition. At discharge, serum creatinine was 0.8 mg/dl, and urine output was 7 L/day.

In conclusion, although the Bombay blood group is a rare blood group, it is safe to accept them as a donor, and desensitization is not required before transplantation.

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Conflicts of interest

There are no conflicts of interest.

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