MAR Clinical Case Reports (2025) 6:10
Short Communication

A Rare Case of Renal Transplantation from a Donor with Bombay Phenotype Blood Group in Sri Lanka.

Dr. Nibras Yaseen (PhD)*

***Correspondence to**: Dr. Nibras Yaseen (PhD), SriLanka.

Received: 06 Oct 2025

Published: 15 Oct 2025

DOI: 10.5281/zenodo.17550236

Introduction

Blood group compatibility is crucial for renal transplantation. People with blood group O are universal donors and those with blood group AB are universal recipients. Apart from dominant blood groups, there are rare blood groups such as Bombay group (Phenotype -Oh). An individual with Bombay phenotype might have an unexpressed genes for the A and/or B antigens. Concurrently they make anti "H" antibodies since the anchoring antigen "H" is absent. This was first discovered in Bombay, India in 1952. Its incidence is 1 in 10,000 in India, 1 in 1,000,000 in Western countries. The incidence in Sri Lanka is even more rare . We found only one case report of renal transplantation involving a donor with Bombay blood group through literature search. We are reporting the first such case in Sri Lanka at Hemas Hospital Wattala.

The recipient was a 54-year old male who had end-stage renal disease as a result of chronic pyelonephritis. He had a history of diabetes mellitus, uncontrolled hypertension which led to cardiomegaly and bilateral mild pleural effusion. Kidney biopsy showed diabetic nephropathy with eGFR of 9 ml/min/1.73m2 which was life threatening. He was on thrice weekly maintenance hemodialysis for three years. He was evaluated for fitness to undergo priority, live- donor transplantation.

The patient's blood group was O Rh -ve and his wife's B Rh+ve. He had 2 siblings, both of whom were diagnosed with diabetes mellitus. He had a son, who was 18 yrs old. Since none of the family members were eligible for donation, he found 43 years old donor who is a friend of recipient, whose blood group was Bombay O Rh+ve.

According to Landsteiner's principle of blood group compatibility, formation of immune complexes, and graft rejection is unlikely after transplanting the kidney from Bombay blood group person to any other blood group person since the "H" antigen is absent. Both complement-dependent cytotoxicity crossmatch and donor-specific antibodies were negative on testing before the transplantation. In the pretransplant phase, induction was carried out with 20mg of Basiliximab on day - 0 and day - 4. Desensitization was not done.

The recipient underwent renal transplantation without any complications and the donor also had an uncomplicated perioperative period. The patient was started on triple immune suppression with tacrolimus, mycophenolate mofetil (MMF) and steroid.

The recipient was stable and discharged on postoperative day 8 with a serum creatinine of 1.0 mg/dl and urine output of 5L/day.

In summary, individuals with rare Bombay blood group can be accepted as live donors safely for kidney transplantation with no desensitization prior to transplantation.

References

1. Bhende YM, Deshpande CK, Bhatia HM, Sanger R, Race RR, Morgan WT, et al. A “new” blood group character related to the ABO system. Lancet. 1952;1:903–4. [PubMed] [Google Scholar]

2.Oriol R, Candelier JJ, Mollicone R. Molecular genetics of H. Vox Sang. 2000;78(Suppl 2):105–8. [PubMed] [Google Scholar]

3.Townamchai N, Watanaboonyongcharoen P, Chancharoenthana W, Avihingsanon Y. A case of nearly mistaken AB para-Bombay blood group donor transplanted to a group ‘O’ recipient. BMJ Case Rep 2014. 2014 doi: 10.1136/bcr-2014-206374. pii: Bcr2014206374. [DOI] [PMC free article] [PubMed] [Google Scholar]

4.Landsteiner K. Zur kenntnis der antifermen-tativen, lytischen und agglutinierenden wirkun-gen des blutserums und der lymphe. Zentralbl Bakteriol. 1900;27:357–62. [Google Scholar].