Importance of Continued Post-Transplant Monitoring of Confirmed False Positive DSA

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Introduction

Post-transplant monitoring by single antigen bead (SAB) panel reactive antibody (PRA) testing is essential in identifying the development of de novo donor-specific antibodies (DSA). However, when DSA has been proven false positive pre-transplant, it can be difficult to decide if and when to re-confirm reactivity. This case study highlights the importance of having a protocol for continued monitoring and re-evaluation of previously determined false positive DSA in post-transplant patients.

Patient History 2011 -2026

December 2011

- Pediatric patient transplanted with a deceased donor kidney.

Summer 2019

- The patient was re-evaluated in August for a second transplant, and an offer was made in September.
- Noted positive antibody reactivity to donor antigen DQ7 (DQA1*05/DQB1*03:01P), (MFIs = 5555, 7366).
- Flow cytometric B cell crossmatch (XM) results were negative (XM B-cell MFI = 546), suggesting false positive reactivity.

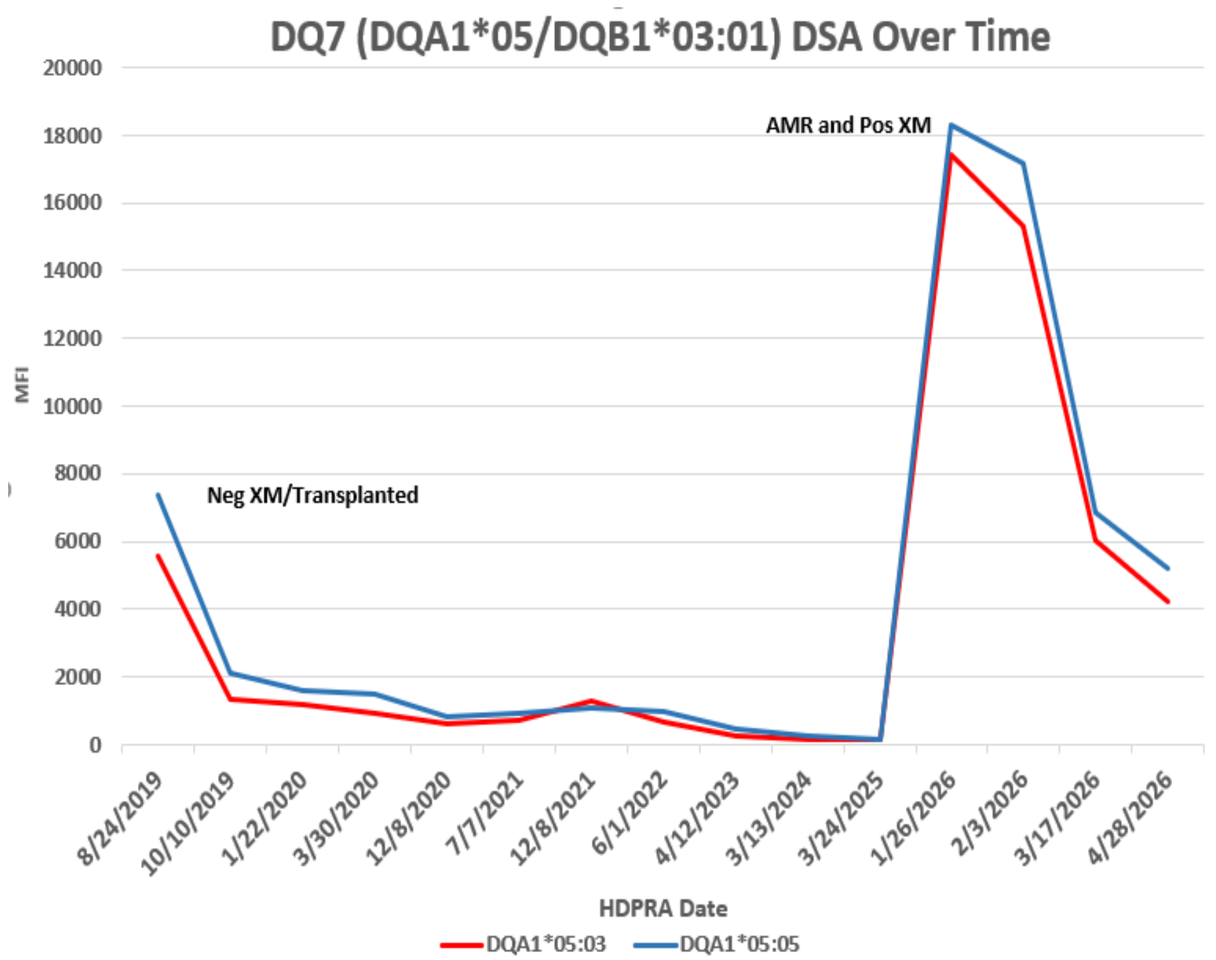
October 2019- December 2025

- First Post-transplant HDPRA performed in October. Antibody reactivity to all DQ7 beads was negative.
- Patient followed annually with no change in DSA reactivity.

January 2026

- Patient admitted to hospital with suspected rejection.
- SAB testing performed STAT and an increase in MFI's detected. DQ7(DQA1*05/DQB1*03:01P) (MFIs = 17413,18322).
- STAT surrogate XM performed with DQ7(DQA1*05/DQB1*03:01P) positive cell, resulted as weak positive, (XM B-cell MFI = 16637).

Patient HDPRA MFI's 2019 - 2026



Updated Hospital Patient Care Protocol

The laboratory spoke with hospital renal team and learned at the time of admission in January 2026, the patient's creatinine level was 7.87mg/dL and the Tacrolimus level was undetectable. A biopsy showed the patient was in acute antibody-mediated rejection. The patient was treated for several days and then discharged. Following discharge, the patient's creatine level dropped to 3.35mg/dL and the Tacrolimus level increased to 11.0µg/L. As of April 2026, antibody reactivity to DQ7 (DQA1*05/DQB1*03:01P) had also decreased, (MFIs = 4212, 5187).

Conclusions

Our laboratory has determined that continued monitoring post-transplant antibodies needs to include a review of changes in HDPRA MFI values of DSA. If MFI values post-transplant for DSA increases 2-fold above the pre-transplant value, it is advisable to re-test known false positive antibodies using a surrogate XM.