

Passenger lymphocyte syndrome due to anti-Jk^a in a liver transplant

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ABSTRACT

Background: We present a case of passenger lymphocyte syndrome (PLS) due to anti-Jk^a identified in a 66-year-old male who underwent liver transplantation for end-stage liver disease. The initial graft failed intra-operatively due to graft non-viability, and re-transplantation was performed two days later. A post-operative positive antibody screen prompted hematopathology review.

Methods: Antibody screening was performed via gel card methodology using the indirect antiglobulin test with group O reagent red cells selected to express clinically significant antigens. Following a positive screen, an extended antibody identification panel was employed using reagent red cells with defined antigen phenotypes. Direct antiglobulin test (DAT) and eluate studies were undertaken to assess *in vivo* coating and confirm antibody specificity.

Results: One day following the second liver transplant, the patient's antibody screen was positive (1+) with a negative extended panel. On post-operative day two, antibody screen remained positive (1+) and was identified as anti-Jk^a on the extended panel. Antibody screen was 2+ on post-operative day five, 1+ by day eight, and negative on day twenty-two. Between post-operative day six and ten, indirect bilirubin levels were elevated. DAT was positive for C3d (1+), and negative for IgG, with a negative eluate. As hemoglobin levels remained stable, an extensive hemolytic workup was not pursued.

Discussion: Findings in this case are consistent with PLS mediated by anti-Jk^a, a rarely reported specificity. The detection of transient complement-binding alloantibody is attributed to donor-derived lymphocytes, despite early graft non-function. These results raise the possibility of a transient complement-mediated hemolysis that did not result in clinically significant anemia.
