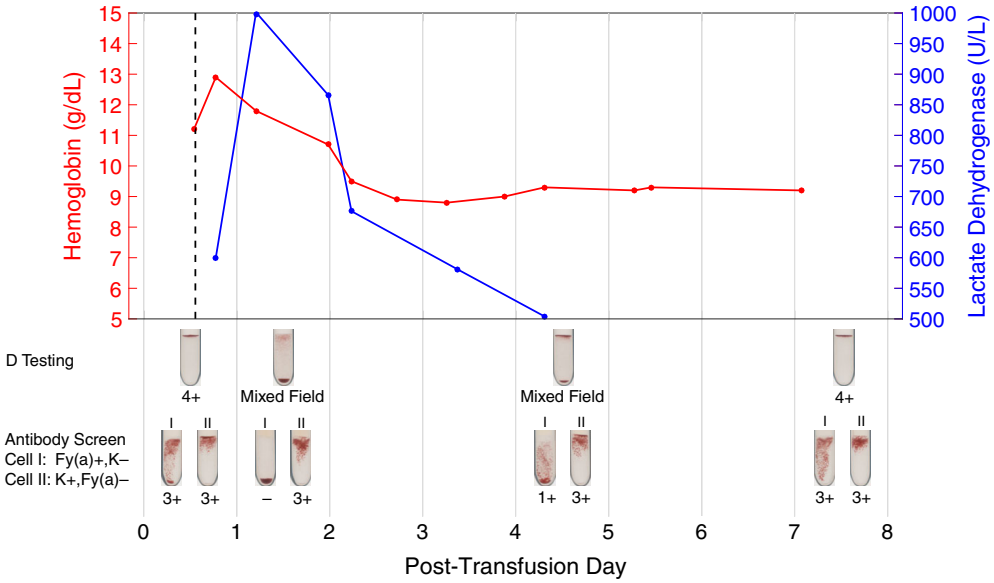
# Visual evidence of a hemolytic transfusion reaction identified by blood bank testing after emergency blood transfusion

*Matthew C. Canver, Melissa M. Cushing, George Vagelatos, and Ljiljana V. Vasovic*




A 76-year-old group O-positive female with history of gastritis presented to the emergency department (ED) after hematemesis at home with associated hypotension (systolic blood pressure [BP] in the 80s) and tachycardia. BP improved after normal saline infusion. The patient was emergently transfused two group O-negative red blood cell (RBC) units obtained from the ED refrigerator in the absence of an active type and screen. BP was 101/70 at the time of the first transfusion.

The patient's previously identified antibodies included anti-Fy(a) and anti-K. An antibody screen using screening cell (SC)-I [Fy(a)+,K–] and SC-II [K+,Fy(a)–] was positive with the antibody panel workup significant for anti-Fy(a) and anti-K. The post-transfusion DAT became positive; the eluate contained anti-Fy(a) and anti-K. Retrospective crossmatch showed incompatibility for both RBC units: the first typed as K+,Fy(a)– and the second K–,Fy(a)+.

The patient developed a hemolytic transfusion reaction following transfusion. The pre- and post-transfusion hemoglobins were 11.2 g/dL (result not available prior to transfusion) and 12.9 g/dL, respectively. Hemoglobin decreased despite no additional bleeding; lactate dehydrogenase increased (see Figure). Total bilirubin increased from 0.3 to 1.3 g/dL (indirect 0.9 g/dL) while creatinine increased from 0.8 to 1.14 mg/dL. Haptoglobin was 86 mg/dL 5 hours post-transfusion and became undetectable within 48 hours. The patient was afebrile throughout hospitalization and did not exhibit any non-laboratory signs/symptoms of hemolysis.

From the Department of Pathology and Laboratory Medicine, New York-Presbyterian Hospital, Weill Cornell Medicine, New York, New York.

*Address reprint requests to*: Ljiljana V. Vasovic, Department of Pathology and Laboratory Medicine, Weill Cornell Medicine, 1300 York Avenue, New York, NY 10065; e-mail: ljv9004@med.cornell.edu.

Received for publication April 18, 2019; revision received July 31, 2019, and accepted August 2, 2019.

doi:10.1111/trf.15522



**TRANSFUSION** 2019;59;3301–3302

D-typing (Grifols Erytra) on Days 1 and 4 post-transfusion showed mixed field due to the transfused group O-negative RBCs. However, mixed field was eliminated by Day 7 due to hemolysis of the transfused RBCs. SC-I became non-reactive 1 day after transfusion theoretically due to in vivo anti-Fy(a) adsorption onto transfused RBCs.[1] SC-I became positive again on Day 4's sample.

This case underlines the risk of hemolytic transfusion reactions due to non-ABO antibodies and the benefits of single-unit transfusions, postponing transfusion until crossmatched RBCs are available, and avoiding unnecessary transfusions for patients with upper gastrointestinal bleeds.[2]

### CONFLICT OF INTEREST

The authors have disclosed no conflicts of interest.

## REFERENCES

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