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ASK A PATHOLOGIST

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QUESTION: A 53 years old female receives transfusion of 2 units of PRBCs. One hour later, she develops acute dyspnea with decreased O₂ saturations. Chest x-ray demonstrates new bilateral pulmonary infiltrates. Could this patient have TRALI?

ANSWER: Yes, Transfusion Related Acute Lung Injury (TRALI) is an uncommon but extremely serious complication of blood product transfusion. It can occur with transfusion of any blood products that contains plasma, including RBCs, FFP, whole blood, platelets, and cryoprecipitate. The risk of TRALI is estimated to be between 1:2000 and 1:5000 units of blood products; and TRALI is the leading cause of transfusion-related mortality.

TRALI is most commonly caused by donor plasma containing anti-leukocyte antibodies, which react with neutrophils in the pulmonary micro-vasculature of the recipient, leading to increased vascular permeability and a pulmonary capillary leak syndrome resembling ARDS.

By definition, TRALI occurs during or within 6 hours of transfusion of a plasma-containing blood product. Symptoms include sudden onset of respiratory distress with clinical and x-ray evidence of acute bilateral pulmonary edema. Hypotension and fever are often present. TRALI is a diagnosis of exclusion and must be distinguished from the more common Transfusion Associated Circulatory Overload (TACO). BNP and NT-pro-BNP levels can be elevated in both conditions and do not reliably distinguish between the two diagnoses. As opposed to TACO, TRALI does not respond to diuretics. Treatment of TRALI is supportive; symptoms typically resolve within 72 hours. Mortality is 5-10%.

If you suspect a patient may have TRALI, it is extremely important to contact your pathologist or blood bank immediately. Since TRALI is often caused by antibodies in donor plasma, the blood donor center must be contacted to quarantine any remaining products from the suspect donors. Suspect donors are tested for anti-leukocyte antibodies, and donors implicated in an episode of TRALI are evaluated for continued eligibility to donate blood products.

Useful References:

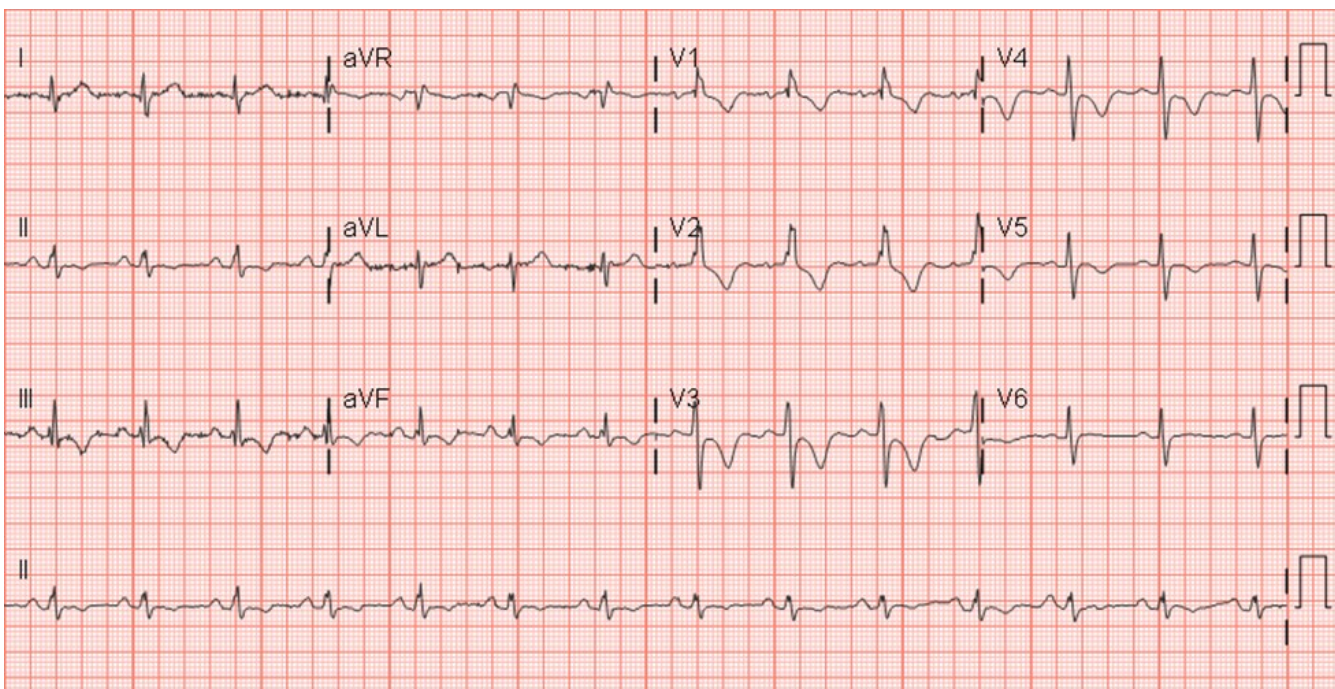
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Send your questions to coberlye@health.missouri.edu to be published in future editions of the Missouri Hospitalist.

An Electrocardiogram that Tells You All You Need to Know



This is a 66 year old woman with progressive dyspnea on exertion for 7 months. Based on the ECG findings, what further evaluation is indicated?

Answer: Page 12