

中文題目：一輸血就昏倒？

英文題目：Acute hypotensive transfusion reaction resulted from bedside blood filters for leukoreduction

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Background

Transfusion reactions can result in clinically benign to fatal outcomes. Acute hypotensive transfusion reaction is one of the transfusion reactions with the features of early and abrupt onset of hypotension. The drop in blood pressure often recovers soon after the transfusion is stopped. This reaction results from disturbance in the production and metabolism of bradykinin, a vasoactive peptide that causes hypotension if binding to B2 receptors on the endothelium.

Case presentation

A 60-year-old man, with a medical history of hypertension, multiple myeloma and end stage renal disease managed with automated peritoneal dialysis, presented at the ED with one-week progressive dyspnea and hypotension. 2 years before this presentation, he had undergone stem cell transplantation and chemotherapy.

His blood tests showed pancytopenia (WBC: 1320/ul, neutrophil: 62.1%, Hb:11.5g/dl, MCV:79.8fl, and platelet: 17000/ul) and a procalcitonin level of 1.8 ng/ml. His chest radiograph showed increased infiltration bilaterally. Basing on the aforementioned findings, he was hospitalized with the initial impression of pneumonia.

In addition to infection control, he also received 7 times of blood transfusion with single donor platelet. However, about 5 minutes after transfusion, the patient experienced fainting, upward gaze, tachycardia, and hypotension except in one time. The symptoms resolved soon after transfusion was discontinued. We excluded transfusion associated sepsis, acute hemolysis, transfusion related acute lung injury and transfusion associated circulatory overload. After careful review of the clinical course, we found out that during the transfusion without hypotension episode, the leukoreduction filter was not used. The patient's following transfusion then arranged without a bedside leukoreduction filter and no more hypotension episode developed again.

Conclusion

There is no commercial test for diagnosing acute hypotensive transfusion reaction and, hence, the condition is a diagnosis of exclusion. The diagnosis is based on careful review of the patient's clinical presentation and special exposure history (such as bedside leukoreduction filters in our case report). The acute hypotensive transfusion reaction results from increased production of bradykinin. Bradykinin is produced after Factor XII becomes activated due to contact with negatively charged surfaces such as tubing systems, dialysis membranes, and blood filters used for leukoreduction.

Key Word: blood transfusion, leukoreduction filter, acute hypotensive transfusion reaction