Abstract:

BACKGROUND: Allergic transfusion reactions (ATRs) are a common adverse reaction to transfusion therapy and can be potentially fatal. Washing blood products is the most effective strategy for preventing ATRs; however, washed products, especially platelets, are not available at many blood centers.

STUDY DESIGN AND METHODS: A 29-year-old female patient with an advanced myelodysplastic/myeloproliferative neoplasm, unclassifiable, developed severe ATRs after four platelet transfusions in a week. She showed no response to premedication with histamines and steroids and still had severe ATRs with the next three platelet transfusions. A laboratory workup revealed that her IgA level was slightly decreased, while her haptoglobin level was normal. Anti-IgA testing was not available. The patient decided to undergo allogeneic peripheral blood stem cell (PBSC) transplantation. As the onset of symptoms ATR, which were similar to Type 1 hypersensitivity reactions mediated by IgE antibodies, occurred immediately after transfusion and omalizumab is a humanized monoclonal anti-IgE, we elected to offer off-label use of omalizumab before administering the conditioning regimen.

RESULTS: Omalizumab was injected subcutaneously at a dose of 150 mg. Surprisingly, transfusion reactions fully resolved within 24 hours. No serious side effects were noticed. Another 150 mg of omalizumab was administered 1 day before PBSC infusion. The patient remained asymptomatic without any signs of ATRs throughout the whole period of transplantation. Seven months after transplantation, the patient was in complete remission without overt complications.

CONCLUSION: This case suggests that omalizumab is a promising new alternative treatment for the prevention of severe ATRs.

Reference: