

## News Release

### Title

Incidence of intraoperative anaphylaxis caused by blood products: A 12-year single-center, retrospective study

### Keypoints / Summary

- The epidemiology of intraoperative anaphylaxis caused by blood products is unknown, possibly because of the difficulty of diagnosis.
- This study combined the grading system, scoring system, and definition of onset delay of intraoperative transfusion anaphylaxis to diagnose intraoperative anaphylaxis caused by blood products.
- The incidence of intraoperative anaphylaxis caused by blood products was higher than the reported incidence, suggesting that intraoperative transfusion anaphylaxis cases might be underreported.

### Research Background

Intraoperative anaphylaxis is rare and potentially life-threatening. As anesthesiologists routinely administer multiple agents, understanding the causative agents of intraoperative anaphylaxis is important for diagnosis as well as to avoid the prospective use of such anaphylactic agents. Although the incidence and causative agents of perioperative anaphylaxis vary by country or region, neuromuscular blockers are the most common causative agents of perioperative anaphylaxis worldwide. Despite being the focus of several national epidemiological surveys, the epidemiology of intraoperative transfusion anaphylaxis remains unknown. According to the 6th National Audit Project Study, there were only two transfusion anaphylaxis cases among approximately 84,000 cases of perioperative blood product administration. The possible reasons for this low reported incidence include the difficulty in determining the causative blood products and in excluding other causative agents and differential diagnoses. However, Lindsted reported that intraoperative transfusion anaphylaxis was likely to be underreported because most transfusion anaphylaxis cases were not reported to hemovigilance systems in Denmark. It remains unclear whether the rarity of perioperative transfusion anaphylaxis is due to the difficulty of diagnosis, underreporting, or both.

### Research Results

We retrospectively reviewed cases wherein general anesthesia was used at a single hospital during a 12-year period. Among the 62,146 general anesthesia cases, 22 cases of intraoperative anaphylaxis

were identified, and 11 of the 22 cases received transfusions before the onset of anaphylaxis. Intraoperative transfusion anaphylaxis was defined as occurring within 30 min of transfusion. Finally, nine cases of intraoperative transfusion anaphylaxis were analyzed. The overall incidence of intraoperative transfusion anaphylaxis was 1/3,994, approximately 10 times that reported in the 6th National Audit Project Study and approximately 3 times that recorded in the Japanese hemovigilance database. No evidence indicated that these cases were reported to the Japanese hemovigilance system, although all intraoperative transfusion anaphylaxis cases were diagnosed by anesthesiologists, suggesting that intraoperative transfusion anaphylaxis cases might be underreported.

### **Future Perspective**

Anesthesiologists should report cases of transfusion anaphylaxis to the blood bank and recognize that transfusion anaphylaxis is not an extremely rare complication. Further studies are needed to better understand intraoperative transfusion anaphylaxis and to ensure the accurate determination of the epidemiology of transfusion anaphylaxis.

### **Publication**

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Authors: Yasuhiro Amano, Takahiro Tamura, Tasuku Fujii, and Kimitoshi Nishiwaki

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