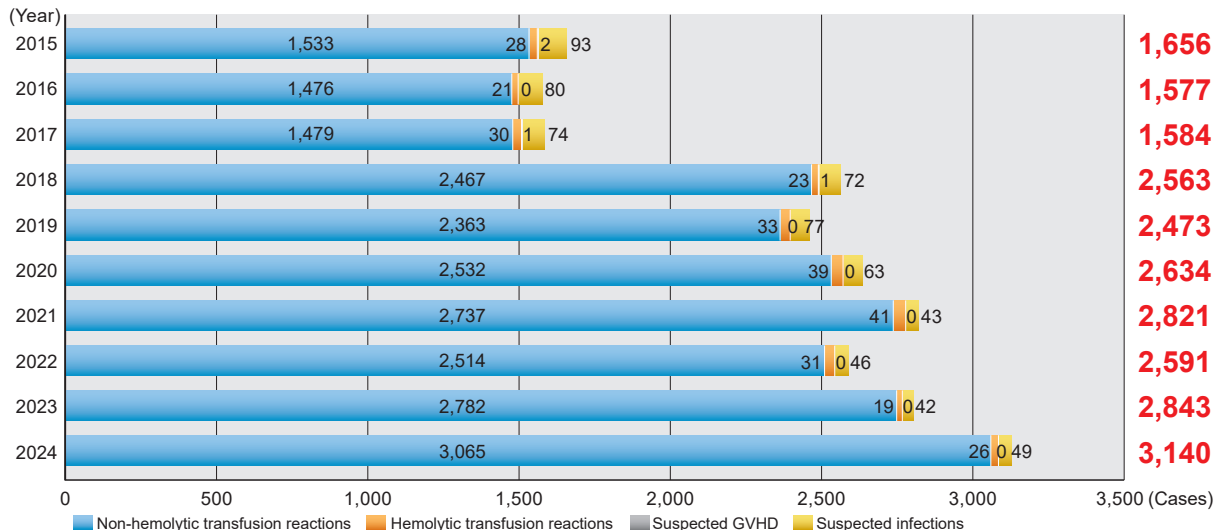


Non-hemolytic Transfusion Reactions Reported to JRC Blood Centers (2024)

Among cases of suspected transfusion-related adverse reactions and infections reported by medical institutions to JRC during 2024, the following are **the most frequently reported non-hemolytic transfusion reactions**.

Annual number of reported adverse reactions and infections, and types of adverse reactions

(Note: Cases assessed as “unrelated to transfusion” are also included in the counts.)



A total of 3,065 cases of non-hemolytic transfusion reactions were reported in 2024. These accounted for 98% of the 3,140 cases reported as transfusion-related adverse reactions and infections.

The increase in the number of reports from 2018 is due to a change in the survey method.

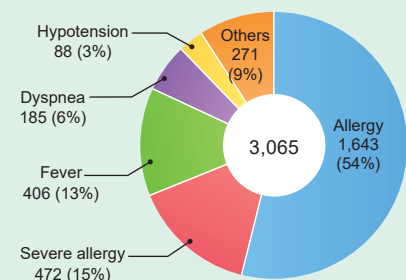
Non-hemolytic transfusion reactions (2024)

Number of reported non-hemolytic transfusion reactions

Allergy was reported most frequently, accounting for 1,643 cases (54%).

Allergy and severe allergy accounted for about 70% of the reported adverse reactions.

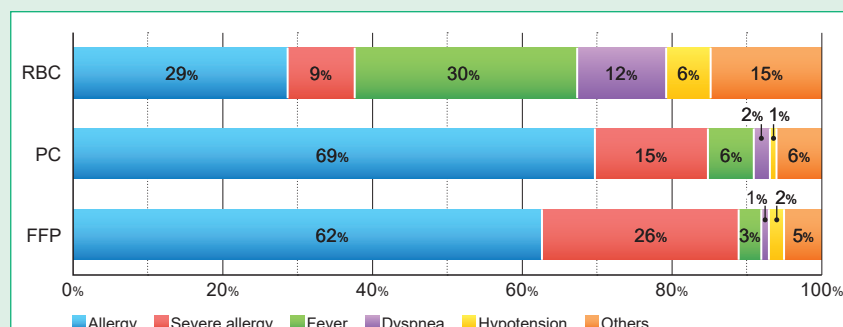
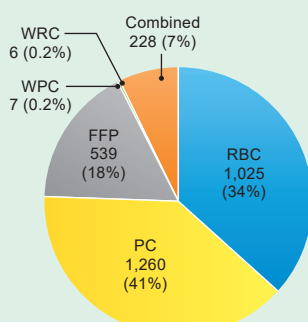
Dyspnea includes TRALI and TACO: 11 cases of TRALI, 80 cases of TACO, and 94 cases of dyspnea.



Implicated blood components and reported adverse reactions by blood component

Many of the non-hemolytic transfusion reactions were caused by platelet concentrates (PCs) or red blood cells (RBCs).

Fever and dyspnea accounted for a notably higher portion in RBCs than other components, as did allergy and severe allergy in fresh frozen plasma (FFP) and PCs.



Percentages may not sum to 100% due to rounding.

Number of reported cases and frequency by component and symptom (frequency based on the total number of bags supplied) (2024)

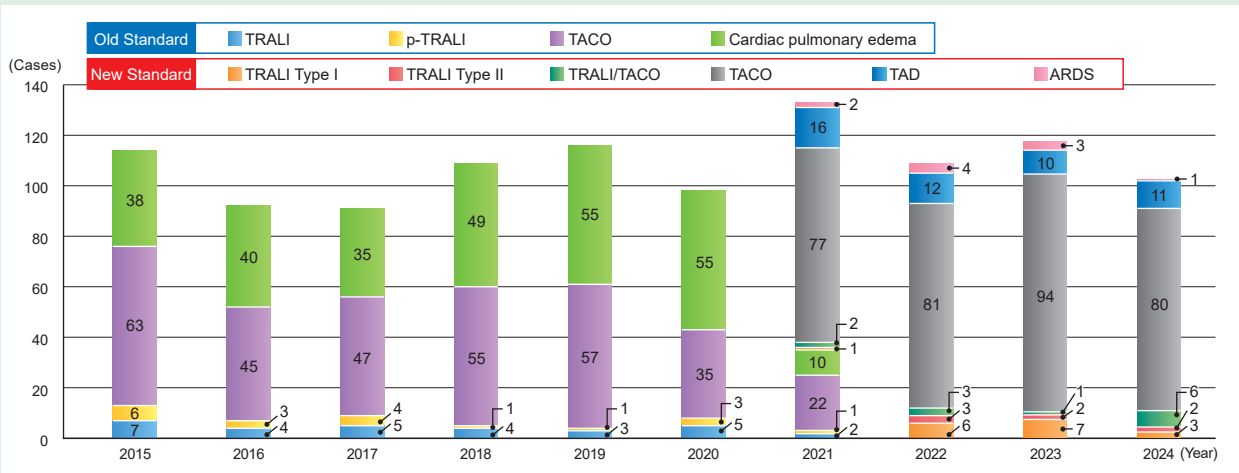
| Component | Platelets* | Red blood cells* | Plasma |
|-------------------------|------------------------------|--------------------------------|------------------------------|
| Number of bags supplied | 825,299 | 3,343,792 | 894,101 |
| Allergy | 873 cases (approx. 1/ 1,000) | 295 cases (approx. 1/ 11,000) | 336 cases (approx. 1/ 2,700) |
| Severe allergy | 195 cases (approx. 1/ 4,200) | 91 cases (approx. 1/ 37,000) | 141 cases (approx. 1/ 6,300) |
| Fever | 70 cases (approx. 1/ 12,000) | 309 cases (approx. 1/ 11,000) | 14 cases (approx. 1/ 64,000) |
| Dyspnea | 20 cases (approx. 1/ 41,000) | 60 cases (approx. 1/ 56,000) | 3 cases (approx. 1/ 300,000) |
| Hypotension | 17 cases (approx. 1/ 49,000) | 57 cases (approx. 1/ 59,000) | 12 cases (approx. 1/ 75,000) |
| TACO | 7 cases (approx. 1/ 120,000) | 57 cases (approx. 1/ 59,000) | 3 cases (approx. 1/ 300,000) |
| TRALI | 2 cases (approx. 1/ 410,000) | 2 cases (approx. 1/ 1,700,000) | 1 case (approx. 1/ 890,000) |
| Others | 76 cases (approx. 1/ 11,000) | 154 cases (approx. 1/ 22,000) | 29 cases (approx. 1/ 31,000) |
| Total | 1,260 cases (approx. 1/ 700) | 1,025 cases (approx. 1/ 3,300) | 539 cases (approx. 1/ 1,700) |

The blood components in the table include both irradiated and non-irradiated components. Cases in which two or more types of blood components were transfused were excluded.

*Washed red blood cells, frozen-thawed red blood cells, blood for exchange transfusion, and washed platelets (including HLA-compatible platelets) were excluded.

Number of TRALI and TACO cases by year (2015-2024)

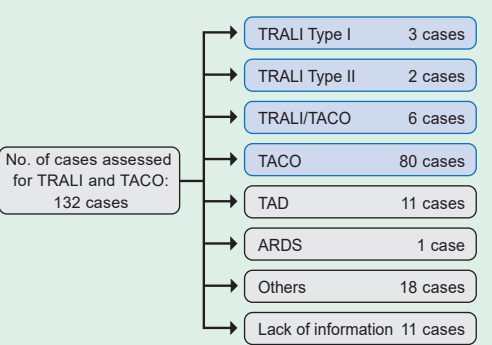
The revised criteria for TRALI and TACO have been applied to reports since April 2021.



Like TRALI, TACO is one of the adverse reactions that exhibit serious symptoms, and there are several tens of reports every year. **When determining the amount and rate of blood transfusion, it is important to consider factors such as the patient's cardiac and renal function.**

*Reference: Transfusion Information 2502-185 "Risk Factors for Transfusion-Associated Circulatory Overload (TACO)"

Breakdown of TRALI and TACO assessment (2024)



In 2024, a total of 132 case reports were subjected to TRALI and TACO assessment. Among these cases, 3 cases (2.3%) were assessed as TRALI Type I, 2 cases (1.5%) as TRALI Type II, 6 cases (4.5%) as TRALI/TACO, and 80 cases (60.6%) as TACO. Among the 132 cases subjected to the assessment, 11 cases (8.3%) could not be assessed due to lack of information such as detailed CRFs and chest images.

Information necessary for TRALI and TACO assessment

- The following information during the period **from 12 hours before the transfusion** to improvement in dyspnea after onset: course of adverse reactions, vital signs, blood cell count (including differential leukocyte count), respiratory status (e.g., blood gases, oxygen saturation)
- Chest images (e.g., X-ray, CT)** before and after the onset of adverse reactions

If serious symptoms such as dyspnea occur, discontinue blood transfusion and take appropriate measures such as oxygen administration, according to the severity.

In case of any suspected adverse reactions or infections related to transfusion of blood components, please notify medical representatives of your local JRC blood center immediately. You may be asked to provide items such as used products and the recipient's samples for investigation of causes. For the storage of used products and the recipient samples, refer to the "Guidelines for Lookback Studies of Blood Products."

Japanese Red Cross Society

Haemovigilance Information English website

For information on blood products and transfusion

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Issued by: _____

Medical Information Division, Technical Department,

Blood Service Headquarters, Japanese Red Cross Society

1-2-1 Shiba-Koen, Minato-ku, Tokyo 105-0011, Japan

* For any inquiries, please contact the Safety Vigilance Division via email (anzenkanri@jrc.or.jp).

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