TRALI - a syndrome of sudden-onset noncardiovascular pulmonary edema occurring during or a few hours after transfusion of a blood product.

General
- The incidence is 1 to 5 in 10,000 transfusions, and it usually occurs after administration of products containing large amounts of plasma, although it has been reported to occur after administration of as little as 50 mL of whole blood or any plasma containing blood products including intravenous immunoglobulins.

Epidemiology
- The pathogenesis is unknown; however, it has been suggested that leukocyte activation due to antibodies in donor plasma to antigens of recipient white blood cells or reactive lipids in aged cellular blood components are important contributing factors.
- Although host factors such as infection, cytokine administration, lung disease, and recent surgery may contribute to the incidence and severity of TRALI, the syndrome was also reported in healthy volunteers receiving blood products.
- Activated leukocytes are sequestered in the lungs and cause damage to the capillary-alveolar membrane leading to congestion, hypoxia, pulmonary edema, hypovolemia, hypotension, and fever.

Pathogenesis
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Laboratory Findings
- Laboratory findings include hemoconcentration, hypoalbuminemia, and neutropenia or neutrophilia.

Treatment
- Early diagnosis is important to prevent administration of diuretics that may be detrimental in TRALI.
- Treatment includes oxygen administration and sometimes mechanical ventilation (required in approximately 68% of cases).
- Corticosteroids have been advocated by some authors, although their use has never been examined in a controlled prospective study.
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Prognosis
- The clinical course in TRALI is often benign, with improvement starting after 24 to 48 hours; if the patient survives, no sequela are observed. However, mortality remains high, at about 5%, and TRALI is the third cause of transfusion-related mortality.
- Prevention is the most important measure including avoiding unnecessary transfusions, increased use of red cells containing less plasma, and possibly avoiding the use of products containing large amounts of plasma derived from multiparous women, who often are autoimmunized against leukocyte antigens during pregnancy.

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