Transfusion-Associated Circulatory Overload (TACO): Strategies to Mitigate the Risk of Harm

By **Matthew A. Taylor**, PhD[1]

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[1]Patient Safety Authority

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What is Transfusion-Associated Circulatory Overload (TACO)? TACO has been defined as "acute or worsening respiratory compromise and/or acute or worsening pulmonary [edema] during or up to 12 hours after transfusion, with additional features including cardiovascular system changes not explained by the patient's underlying medical condition, evidence of fluid overload and a relevant biomarker."[1] Definitions of TACO vary across the literature[1,2] and some of its features may overlap with the definition and presentation of transfusion-related acute lung injury (TRALI).[2,3] Risk factors for and clinical presentation of TACO are reviewed in several resources[1,2,4] and we recommend that clinical staff read references 1, 2, and 4.

Occurrence of TACO and Impact on Patients. The Medicines and Healthcare products Regulatory Agency in the United Kingdom released an April 2024 National Patient Safety Alert informing the healthcare community of an increasing trend of TACO-related deaths and major morbidity.[1] Through an exploration of data in the Pennsylvania Patient Safety Reporting System (PA-PSRS), the Patient Safety Authority (PSA) also found that hundreds of TACO events have been reported across Pennsylvania in recent years, *including reports of serious patient harm and death*. PSA encourages the healthcare community to be aware of risk factors for, clinical presentation of, and strategies to mitigate the risk of TACO.

Strategies to Mitigate the Risk of TACO.[1]

- Use a pretransfusion risk assessment.
- Ensure that only necessary transfusions are performed.
- Use weight-based dosing of red blood cells, particularly for patients with low body weight.
- Consider using a validated red blood cell calculator to estimate the amount of transfusion required to meet the target hemoglobin.
- Transfuse a single unit or the minimum number of units necessary to achieve the hemoglobin target.
- Transfuse at recommended rates, no faster.
- If appropriate, administer a diuretic, oxygen, or other adjunct treatments.
- During and following transfusion, closely monitor the patient's vital signs, and promptly intervene, if necessary.

References

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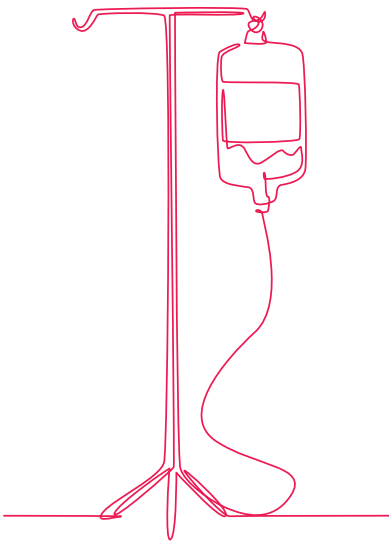

About the Author

Matthew A. Taylor (MattTaylor@pa.gov) is a research scientist on the Data Science & Research team at the Patient Safety Authority (PSA), where he conducts research, uses data to identify patient safety concerns and trends, and develops solutions to prevent recurrence. He is a core team member of PSA's Center of Excellence for Improving Diagnosis.