Evidence-Based Guideline: Safety and Efficacy of Using Type A Plasma in Massive Transfusion (TQIP-Aligned)

Effective Date: 12/10/2025

Retires Policy Dated: N/A

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Updated Date: N/A

Scope

This guideline applies to the use of **low-titer anti-B Group A plasma** as emergency-release plasma in adult trauma patients requiring massive transfusion at St. Mary Medical Center, Apple Valley, California. It is intended for use when recipient ABO type is unknown or when AB plasma is not immediately available.

Purpose

To provide evidence-based guidance on the **safe and effective use of Group A plasma** for massive transfusion while aligning with **TQIP recommendations**, ensuring rapid availability, patient safety, and adherence to blood-bank and trauma-system standards.

Background

- AB plasma has historically been considered the "universal plasma" due to the absence of anti-A and anti-B antibodies, but **AB donors comprise only ~3–4% of the U.S. population**, leading to frequent shortages (Yazer et al., 2021; American Red Cross, 2022).
- Observational studies and prospective safety analyses (e.g., STAT study) demonstrate that **low-titer anti-B Group A plasma** can be safely used for initial resuscitation in trauma patients with unknown ABO type without increased risk of major complications (Dunbar et al., 2017; de Roulet et al., 2020).
- TQIP guidelines endorse the use of **low-titer anti-B Group A plasma** for emergency-release purposes when AB plasma is unavailable and require rapid switching to ABO-matched products once typing is known (ACS TQIP, 2023).
- Early plasma transfusion is associated with improved hemostatic outcomes and supports balanced resuscitation in hemorrhagic shock (Sperry et al., 2018; PROPPR trial secondary analysis).

Indications

- Activation of a **Massive Transfusion Protocol (MTP)** for trauma patients with unknown ABO type when AB plasma is unavailable.
- Adult patients in hemorrhagic shock requiring **rapid plasma resuscitation** per institutional protocol.

Contraindications / Cautions

- Known B or AB recipients: use ABO-identical or AB plasma when available.
- Pediatric / neonatal patients: preferentially use AB or ABO-identical plasma; low-titer Group A plasma only if absolutely required, with strict monitoring.
- History of severe allergic reactions to plasma components.

Complications & Risk Estimates

Complication	Estimated Frequency / Notes	Mitigation
TRALI (Transfusion-Related Acute Lung Injury)	Rare; contemporary series report <0.01% per unit after mitigation (male-donor, screened plasma) (Meyer et al., 2018)	Use male-predominant or screened plasma; monitor respiratory status
Hemolytic transfusion reaction (passive hemolysis from anti-B antibodies)	Very rare in adults; mostly case reports, risk higher in pediatrics/ small patients (Augustine et al., 2021)	Limit initial incompatible units; use low-titer plasma; monitor hemolysis labs (Hgb, LDH, bilirubin, urine Hb)
Allergic reactions / anaphylaxis	Mild reactions: 1–3% per plasma unit; severe anaphylaxis <0.05%	Monitor; have emergency medications ready
TACO (transfusion-associated circulatory overload)	Variable, depends on volume status	Monitor fluid balance; transfuse per hemodynamic status

Bottom line

Major adverse events are rare, and the benefits of rapid plasma resuscitation outweigh risks when low-titer Group A plasma is used per protocol (Dunbar et al., 2017; de Roulet et al., 2020).

Operational & Safety Recommendations (TQIP-Aligned)

- Emergency-Release Plasma (ERP) Selection: Use low-titer anti-B Group A plasma when AB plasma is unavailable. Maintain titer thresholds according to institutional blood-bank standards. (ACS TQIP, 2023; Yazer et al., 2021)
- Inventory & Timing: Pre-thawed ERP must be ready at MTP activation; additional plasma should be deliverable within 15 minutes. ([ACS TQIP, 2023])
- ABO Testing & Transition: Draw recipient ABO at MTP activation. Switch to ABO-matched or AB plasma immediately upon typing results, ideally within 10 minutes of result availability.
- Unit Limit: Restrict initial incompatible units to the minimum required to stabilize the patient (commonly 4–8 units per initial MTP "pack").
- Monitoring: Observe for hemolysis, TRALI, TACO, or allergic reactions; document all ERP units and patient responses.
- Balanced Resuscitation: Use plasma:RBC ratio consistent with MTP best practices (1:2 to 1:1) and include platelets per protocol.

Version Control Record			
Version	**Date**	**Author/Reviewer**	**Description of Changes**
1	12/10/2025	Paul Wisniewski, D.O.	Initial review and update to reflect latest evidence/practice

References

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