



EMS System for Metropolitan Oklahoma City and Tulsa 2023 Medical Control Board Treatment Protocols



Approved 9/14/22, Effective 1/16/23, replaces all prior versions

170 – LOW TITER O+ WHOLE BLOOD(LTOWB) METROPOLITAN OKLAHOMA CITY

TREATMENT PRIORITIES

1. MARCH Assessment:
 - > Massive bleeding control
 - > Airway – NPA/OPA/Crich
 - > Respiratory – decompress chest if tension pneumothorax, seal “sucking” chest wound(s)
 - > Circulation – IV/IO, wound packing
 - > Hypothermia care
2. Minimize scene time in critical case.**
3. **Initiate Whole Blood transfusion**
4. Enroute Care:
 - > Reassess all primary care
 - > Support oxygenation/ventilation
 - > Vascular access
 - > Secondary Survey (if able)
 - > Keep patient warm/avoid hypothermia
5. Transport to OUMC - Trauma.

PARAMEDIC

Class: Blood Products

Purpose: Increase survival from traumatic hemorrhagic shock, factoring trauma patients who receive whole blood vs component therapy have many advantages, one of the most important being a reduction in 30-day mortality per published studies.

Actions/Pharmacodynamics:

Whole blood **provides red cells, stable clotting factors, and volume in each unit** that make it potentially beneficial in rapidly hemorrhaging patients.

Indications: Hemorrhagic Shock in Priority 1 Trauma Patients

- Males ≥ 15 years old/ Females ≥ 51 years old AND
- Systolic Blood Pressure < 70 mmHg OR
- Systolic Blood Pressure < 90 mmHg with Heart Rate ≥ 110 beats per min **OR**
- $ETCO_2 < 25$ **OR**
- Witnessed traumatic arrest < 5 minutes prior to provider arrival and continuous CPR throughout downtime **OR**
- Post traumatic arrest/ ROSC obtained

For Hemorrhagic Shock in Priority 1 Geriatric Trauma Patients

- If age ≥ 65 years old **AND** Systolic Blood Pressure ≤ 100 with HR ≥ 100 beats per minute

Contraindications and Precautions:

- Ground level falls/found down
- Males less than 15 years old
- Females less than 51 years old
- Burns
- Religious objection to receiving whole blood



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Protocol 170: Low Titer O+ Whole Blood (LTOWB) Metropolitan Oklahoma City cont.'

Side Effects: Transfusion Reactions- Fever, chills, urticaria (hives), and itching. Respiratory distress, high fever, hypotension, and hemoglobinuria can indicate a more serious reaction.

Dosage: One unit of Low Titer O+ Whole Blood

How Supplied: One unit of Low Titer O+ Whole Blood contains approximately 500 ml of blood and is packaged by the Oklahoma Blood Institute.

Infusion Site Considerations

LTOWB requires an 18 gauge or larger IV/IO. IO transfusion is authorized but is less efficient than IV. The humeral neck is the most effective IO site if used for blood transfusion.

If TXA is needed it should be administered through a separate IV. This IV should be established in a different extremity than the one in which LTOWB is transfusing.

Procedure: Prepping Tubing and Disposable Unit for Whole Blood Administration

- Make certain that unused portion of the IV line is closed off.
- Attach the IV line to the Disposable Tubing Unit.
- Attach the Disposable Tubing Unit to the Blood Warmer.
- Attach Disposable Tubing Unit to the saline lock.
- Spike the 100 mL NS bag to appropriate port on the Blood Tubing.
- Spike the Whole Blood Bag to the appropriate port on the Blood Tubing.
- Prime the IV-line, Disposable Tubing Unit, and saline lock with saline prior to powering on the Blood Warmer.
- Turn Blood Warmer ON.
- Start infusion of LTOWB (do not wait for the blood to warm).
- Place LTOWB in the Pressure Bag and pump up the Pressure Bag.
- Use the hand pump built into the blood tubing for rapidly administering LTOWB.
- Once LTOWB infusion is complete, flush line with remaining saline from 100 mL bag.

**Avoid excessive delays related to availability of LTOWB. Scene times may be delayed while starting LTOWB. However, there should not be a significant delay waiting on LTOWB to arrive on-scene. Consider intercept enroute to transition LTOWB case to transporting unit if time allows.