

AUTOTRANSFUSION: CHEST TUBE DRAINAGE SYSTEM – ICU/ED

- PURPOSE:** To outline the management of patients receiving autotransfusion via a chest tube drainage system.
- INDICATIONS:** Implement this standard pre, during, and 24 hours post autotransfusion.
- SUPPORTIVE DATA:** Blood collection must be completed within four hours and re-infused within the following two hours, i.e., total collection and re-infusion must be completed within six hours. This blood cannot be stored.
- The criteria for autotransfusion may vary with different patient populations. Autotransfusion used for adults in non-emergent situation and Jehovah's Witness patients requires their consent. Autotransfusion used for pediatric patients in any situation (including Jehovah's Witness pediatric patients) require parental/guardian/conservator consent.
- ASSESSMENT:**
1. Assess baseline vital signs (VS) and temperature prior to initiation of autotransfusion.
 2. Reassess VS:
 - After transfusion is completed
 - With any signs/symptoms (S/S) of adverse reactions
 3. Assess the following every 1 hour during the infusion:
 - Intake and output
 - Infusion rate
 - Intravenous patency
 - S/S transfusion reaction
 - Clots in autotransfusion bag
 - S/S of air embolism:
 - Shortness of breath
 - Hypoxia
 4. Evaluate laboratory results as drawn.
- ADMINISTRATION:**
5. Perform the following as ordered:
 - Add 50 mL citrate [citrate-phosphate-dextrose (CPD) or anticoagulant-citrate-dextrose solution – A (ACD-A)] to the chest tube drainage system's collection chamber/bag prior to chest tube hook-up and initiation of blood collection. (This will anti-coagulate the first 400 mL of blood drained)
 - When the collection chamber fills another 400 mL, add 50 mL more citrate
 - Let collection chamber/bag fill to between 400-700 mL (including citrate) before re-infusing
 - Add 50 mL of CPD or ACD-A for each subsequent 400-800 mL collected
 6. Use appropriate drainage scale (depending if patient is on gravity drainage or suction) on the collection chamber/bag to determine blood volume.
 7. Agitate the blood and anticoagulant in the collection chamber/bag gently to mix.
- PATIENT/
CAREGIVER
EDUCATION:**
8. Teach the patient/caregiver the following:
 - Purpose and definition of autotransfusion
 - S/S of blood transfusion reactions
- SAFETY:**
9. Label autotransfusion blood bag:
 - Date, time collection begins
 - Blood bag number in sequence
 - RN initials
 - Patient's name and medical record number (MRN)“UNTESTED: AUTOLOGOUS USE ONLY”

AIR EMBOLISM/
CLOT
PREVENTION:

10. Infuse by infusion pump or gravity.
 - Do not use a pressure bag.
 - Do not re-infuse entire bag.
11. Use a **new** micro-emboli 40 micron filter for each autotransfusion blood bag.

REPORTABLE
CONDITIONS:

12. Notify the provider for the following:
 - Presence of clots in autotransfusion blood bag
 - Transfusion reaction
 - S/S air emboli

ADDITIONAL
STANDARDS:

13. Refer to the following as indicated:
 - Blood and Blood Products
 - Chest Tubes
 - Intravenous Therapy

DOCUMENTATION:

14. Document in accordance with documentation standards.
15. Record autotransfusion on iView
 - Systems Assessment Navigator band, Chest Tube section
 - Blood Product Administration Navigator band, add dynamic group “Whole blood (autotransfusion)”
 - Intake & Output

Initial date approved: 03/99	Reviewed and approved by: Blood Utilization Committee Critical Care Committee Professional Practice Committee Nurse Executive Committee Attending Staff Association Executive Committee	Revision Date: 10/00, 03/05, 09/05, 02/11, 01/13, 03/15, 10/20
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