

PROTOCOL FOR: Autotransfusion (ATS): Chest-Tube Drainage Post-Open Heart Surgery

- POLICIES:
1. Each ATS collection unit should be used for a maximum of 6 hours total collection and reinfusion time to reduce the risk of clotting and infection.
 2. A physician's order is required to institute autotransfusion.
 3. A microaggregate filter must be used with the ATS system.
 4. ATS will only be done with the post-operative open heart patient.

DESIRED
PATIENT
OUTCOME:

Patient will remain or achieve hemodynamic stability as a result of the ATS.

CLINICAL
ASSESSMENT
AND CARE:

1. When the patient arrives in the ICU, assess the quality and quantity of chest tube drainage in the collection system.
2. Assess and monitor chest tube drainage q 15 minutes for 1-2 hours to note trend of drainage amount (i.e., is it increasing or decreasing?).
3. ATS may be initiated when there is:
 - a. at least 200 cc in the collection system
 - b. the patient's hemodynamics/lab values reflect the patient could benefit from this volume
 - c. the drainage has been in the collection system for 4-6 hours or less
4. Assess ATS drainage for presence of excessive clot formation. May want to consider adding citrate, phosphate, dextrose (CPD) as an anticoagulant in the ATS system (is added through the sampling port), per MD order.
5. Eliminate air from the unit before reinfusing which will reduce the risk of potential clotting at the air-blood interface.
6. During reinfusion, closely monitor the patient's B/P, left atrial pressure (LA), pulmonary artery wedge pressure (PCWP), and/or central venous pressure (CVP). Assess patient's response to infusion and consider slowing or discontinuing the infusion if patient's pressures are in excess of desired parameters (see MD orders), and or drainage is < 60 cc/hour (see MD orders).

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7. Discontinuing the ATS may be necessary if excessive drainage continues from mediastinal tubes, despite corrected coagulation values. Discuss with MD.
8. Continue to monitor lab values: electrolytes, BUN, creatine, hemoglobin and hematocrit, platelet count, Pt/PTT, and fibrinogen, per MD orders.
9. Notify House Officer for:
 - a. Drainage from chest tubes > 200 cc/hour (note trends).
 - b. Elevated hemodynamic pressure measurements, possibly secondary to ATS infusion.
 - c. Presence of excessive clots in ATS drainage.

CONTRA-
INDICATIONS:

1. Do not reinfuse ATS if any of the following circumstances exist:
 - a. Bacterial contamination of shed blood, either during surgery or from actual or suspected trauma
 - b. Break in technique during collection
 - c. Possible contamination of blood with malignant cells from the site of a tumor resection
 - d. The chest was irrigated with a solution prior to closure of the wound
2. Possible relative contraindications include:
 - a. Patients with renal failure who may not tolerate increased levels of plasma-free hemoglobin and potassium that may occur with autotransfusion.
 - b. Patients with massive blood losses or with specific coagulopathy who may be more easily managed with specific component therapy.

DOCUMENTATION: 1. Record reinfused blood as "ATS" on the ICU flowsheet, intake section.

APPROVAL: ICU Standards Committee
ICU Coordinating Committee
Nursing Standards Committee

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EFFECTIVE DATE: 1/95

REVISION DATES: 3/96, 3/00, 10/03