

Suspected Acute Hemolytic Transfusion Reaction (AHTR)

1) Pathophysiology of ABO incompatible transfusion:

- Complement activation
- Hemolysis with release of red blood cell stroma

2) Clinical signs and symptoms of intra-vascular hemolysis in the patient under anesthesia

- Diffuse oozing, or uncontrolled bleeding (may be first clinical sign)
- Hemoglobinemia, hemoglobinuria, acute renal failure
- Fevers and chills (may not be present in an anesthetized patient)
- Rash
- Dyspnea or wheezing
- Hemodynamic instability (hypotension, tachycardia) or shock
- Multi-system organ failure or death

3) Laboratory manifestations of intra-vascular hemolysis

- Lab reports "hemolyzed" blood sample
- Positive DIC screen
- Persistent anemia despite replacement
- Hypoxia, acidosis

Immediate Actions

- IMMEDIATELY STOP THE TRANSFUSION: Adverse transfusion reactions are dose-related
- Immediately Contact Blood Bank
- Save unit (s) and send back to blood bank
- For ongoing blood requirements give Type O blood until patient re-typed and cross-matched
- Send Transfusion Reaction Screen: Red tube, Lavender tube, urine sample and blood bag

5) Management of Hypotension

- Infuse NS for volume replacement, avoid solutions containing K⁺
- Infuse Dopamine or other pressor as needed
- Consider arterial and central venous monitoring

6) Management of DIC

- Monitor PT, aPTT, fibrinogen, D-dimer, platelet count
- For active bleeding give blood products(e.g., FFP, platelets, cryoprecipitate) after consultation with a hematologist or Blood Bank Director

7) Optimize renal function

- Monitor UO, BUN, Cr, and Electrolytes

Maintain UO greater than 100ml/hour

- Utilize furosemide and/or dialysis to manage fluid imbalance or hyperkalemia

8) Consider Exchange Transfusion

- Arranged through the Blood Bank Director

Reference/Assistance

- Lead Blood Bank Technologist will notify Blood Bank Director for consultation
- Back of Pink Blood Tag on transfused unit has hospital protocol for AHTR