I. Policy / Procedure Requirements

A. **STOP THE TRANSFUSION** if a transfusion reaction is suspected

B. Change tubing and hang normal saline

C. **Call physician/ LIP**

D. Notify Blood Bank of potential reaction

E. **DO NOT DISCARD BLOOD PRODUCT OR TUBING.**
   
   i. Perform bedside clerical recheck on blood product, accompanying requisition and patient identification band
      
      a. Name, medical record number and unique blood bank number if utilized
      
      b. Unit number
      
      c. Blood type
   
   ii. Place in Biohazard bag

   iii. Return biohazard bag with blood product, tubing and accompanying paperwork to the Blood Bank

II. Procedure

A. **Assessment/ Re-assessment/ Evaluation**
   
   i. Click on link below to be directed to Mosby's Nursing Skills, then select extended test:

   Transfusion Reaction


B. **Materials and Equipment**

   Transfusion Reaction

   HO.PC.50
i. *Hospital specific Transfusion reaction form*

ii. If clinical condition warrants further work-up may be ordered:
   a. Obtain post reaction blood sample: send EDTA (Ethylenediaminetetraacetic acid) tube to blood bank (pink, purple or lavender)
   b. Collect first voided urine (or catheterized sample if patient unable to void) and retain for possible testing

C. **Implementation**

i. See Mosby Nursing Skills Transfusion Reaction (link above)

III. **Documentation**

A. **Record**

   i. Time transfusion stopped
   
   ii. Completion of repeated bedside clerical check
   
   iii. Physician/LIP notification
   
   iv. Patient response to treatment

IV. **General Information**

There shall be a process for the administration of blood and components that includes the recognition, evaluation and reporting of suspected transfusion-related adverse events. The medical director shall participate in the development of protocols used by the transfusing staff to identify, evaluate and report the adverse events related to transfusion.

V. **Supportive Evidence**

A. **Definitions**
i. **Hemolytic:** Applies to red blood cell and granulocyte components only

The most severe reaction is the acute hemolytic transfusion reaction triggered by immunologic events and mediated by a neuroendocrine response and by activation of the complement and coagulation systems. The most common cause is ABO mismatch due to a patient identification error resulting in transfusion of the wrong blood to the recipient. Other possible causes are: incompatibility of other blood groups when the patient has been sensitized by previous transfusion or pregnancies, infusion of hypotonic solutions, or donor blood damaged by heating, freezing or mechanical disruption. Onset is characterized by many symptoms including pain at the site of infusion, shock, fever, chills, low back pain, hemoglobinuria, oliguria, bleeding and cardiac arrest.

ii. **Septic Reaction:** Bacterial contamination of any blood component can cause a septic transfusion reaction due to an endotoxin produced by cold-growing gram negative bacteria. The reaction is characterized by high fever, red shock, DIC, and renal failure. Delirium, blood-streaked vomitus, diarrhea, and exquisite muscle tenderness may also be seen.

iii. **Febrile Non-Hemolytic:** Febrile Non-hemolytic

Applies to any blood components but generally with red blood cells and platelets

Febrile non-hemolytic reactions (FNH), i.e., a temperature rise of 1°C or more occurring in association with transfusion and without any other explanation, are caused by cytotokines in donor plasma or released from donor white blood cells by cytotoxic or agglutinating antibodies in recipient plasma. The fever may be mild to severe and may begin at any time during or an hour or two after transfusion, often proceeded by or accompanied by chills. Can be treated (or premedicated) with Tylenol 650 mg. Leukocyte reduced components are usually recommended after a patient has had two or more FNH reactions.

iv. **TRALI (Transfusion Related Acute Lung Injury):**

Respiratory distress can develop from donor antibodies to HLA or neutrophil antibodies in plasma containing products. (Includes fresh frozen
plasma, platelets, cryoprecipitate and red cells.) Typically includes chills, fever and hypotension occurring within 1 to 2 hours of transfusion and always within 6 hours. Volume of transfused product is disproportionate to the reaction and can be seen in a volume as low as 20 mls. Recipient may experience acute respiratory insufficiency and/or radiologic findings which are consistent with bilateral pulmonary edema. If suspected, the transfusion should be stopped immediately and the same unit should not be restarted even if symptoms abate. Treatment consists of general respiratory support.

v. **Hypovolemia:** Fluid overload. To much fluid in the intravascular space.

vi. **Allergic Reactions**

   a. **Urticarial - Any component:** Urticarial allergic reactions are characterized by local erythema, hives and itching. When not accompanied by fever or any other adverse effects, urticaria is the only type of transfusion reaction in which it may not be necessary to discontinue transfusion. Usually the transfusion is interrupted and antihistamine is administered, e.g., Diphenhydramine/Benadryl 25-50 mg.. Resume transfusion only after symptoms resolve.

   b. **Anaphylactic Reaction - Any component:** Anaphylactic reactions can occur in IgA deficient patients receiving IgA (in plasma). More commonly, they occur in other patients to unknown allergens in plasma. Features that distinguish anaphylactic reaction from other immediate reactions are: (1) occurrence after infusion of only a few milliliters of blood or plasma and (2) absence of fever. Onset is characterized by coughing, respiratory distress, vascular instability, nausea, abdominal cramps, vomiting, diarrhea, shock and loss of consciousness. Treatment includes antihistamine, steroids, epinephrine, and respiratory and blood pressure support, as needed. For IgA deficiency, diagnosis is made retrospectively by demonstration that the patient's serum lacks IgA and/or by demonstration of Transfusion Reaction.
anti-IgA in the patient’s plasma.

B. References


C. Appendices

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<th>Key Words:</th>
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