TRANSFUSION REACTION CASES
Pre-Session Worksheet

Complete this worksheet by filling in all blanks using your reference materials. After the pre-session is completed, take the required Blackboard quiz over this review material by 8:00 a.m. CT on the scheduled case day. The quiz is available one week prior to the scheduled class time.

1. Name four steps required in an investigation of immediate transfusion reactions.

2. A Blood Bank technologist notices a macroscopic appearance of small clumps of cells in cloudy cellular supernatant and a microscopic appearance of agglutinated cells in a sea of free cells. This pattern is typical of _____ agglutination.

3. Explain why a DAT may show mixed field agglutination in a hemolytic transfusion reaction.

4. What are some laboratory results that may indicate a patient is experiencing a delayed transfusion reaction?

5. A primary humoral response will have primarily IgG / IgM antibodies, a quicker / slower response, and a higher / lower antibody concentration or titer.

   A secondary or anamnestic response will have primarily IgG / IgM antibodies, a quicker / slower response, and a higher / lower titer of antibody.

6. An extravascular / intravascular hemolytic transfusion reaction is typically the result of RBC lysis due to complement activation and is most frequently due to transfusion of ABO incompatible red blood cells.

   An extravascular / intravascular hemolytic transfusion reaction is typically the result of red blood cells being removed by the RE system (liver and spleen) and can usually be attributed to blood groups other than ABO (Kidd, Duffy, Kell, etc.).

7. List the key symptoms of Transfusion-Associated Graft vs. Host Disease (TA-GVHD).

8. What patient populations are most likely to suffer from TA-GVHD?

9. How is TA-GVHD prevented?

10. Complete the chart on the next page comparing the cause of the reaction, the symptoms and the treatment and prevention of the indicated transfusion reactions:

Transfusion Rx	Cause of Reaction	Symptoms	Key Laboratory Tests	Treatment and Prevention
Febrile non-hemolytic * Most commonly reported		1. Fever - Temp ↑ of ≥1^0 C during or shortly after transfusion) 2. Chills 3. Severe rxn may show respiratory distress		During: Antipyretics (reduce fever) Prevention: Leukoreduced products, Antipyretics before transfusion
Transfusion-related Acute Lung Injury		1. Fever/chills 2. Hypotension 3. Cough/Dyspnea 4. Cyanosis 5. Hypoxemia 6. Bilateral pulmonary edema (onset within 6 hours of transfusion)	No definitive lab test. Diagnosed by excluding other causes and chest X-ray. Seen in plasma-containing products.	During: Prevention:
	Exact cause unknown, usually recipient IgE reacting with allergen in donor plasma; histamine appears to be the primary mediator	1. Urticaria (hives) 2. Pruritis (itching) 3. Erythema (redness)	No definitive test.	
		*No fever 1. Cough/Dyspnea 2. Bronchospasm 3. Hypotension 4. Nausea 5. Loss of consciousness	Immunoelectrophoresis to measure IgA levels. Immunodiffusion to ID antibodies to IgA.	During: 1. Epinephrine 2. Steroids 3. Presser agents (↑ blood pressure) Prevention: 1. Washed cells 2. IgA deficient products, if plasma products are required 3. Autologous units
	RBC antigen-antibody reaction resulting in activation of the neuroendocrine, coagulation, and complement systems = hemolysis		Clerical checks, visual inspection of the specimen, DAT, ABO/Rh verification, haptoglobin, UA, bilirubin	During: Diuretics, hypotensives, blood components to treat DIC Prevention: Transfusing antigen negative units, and absolute patient identification
	Bacteria and their endotoxins (*Yersinia enterocolitica, E. coli, Pseudomonas* sp.)	1. Rapid onset of high fever (>2C increase) 2. Dry, flush skin 3. Hypotension & shock 4. Nausea & pain 5. Chills 6. DIC 7. Renal failure		Broad spectrum antibiotics. Treat for shock, hypotension, etc. Avoid product contamination during donor phlebotomy and component preparation.