1. Fatal blood transfusion reactions are most likely the result of:
   a. Circulatory overload
   b. ABO incompatible blood due to patient identification errors
   c. Sepsis
   d. Anaphylactic shock

2. To reduce the risk of bacterial growth, all blood products should be started no later than:
   a. 30 minutes from time of issue from the Blood Bank
   b. 2 hours from the time it arrived in the patient care area
   c. There is no time limit as the refrigerated products can be safely stored in a food/beverage or drug fridge
   d. There is no time limit as platelets are stored at room temperature
   e. There is no time limit if product comes in a cooler

3. The risk of ABO incompatible blood transfusion is greatest when:
   a. Specimen tubes are labeled at the nurses station after the blood draw
   b. Each label is checked with the patient's armband (patient name and hospital record number) at the bedside
   c. Only one nurse checks the blood product before transfusion
   d. Only one nurse signs off on the two person pretransfusion check

4. What clinical findings would result in a nurse suspecting the patient received ABO incompatible blood?
   a. Fever (Temperature increase of 1 degree C from baseline), chills
   b. Pain in flank, abdomen and along infusion site, bleeding at infusion site
   c. Urticaria (hives) but no other findings
   d. a and b

5. Blood warmers should only be used:
   a. If ordered by a physician
   b. If the blood warmer is checked prior to use and audible alarms and visible thermometer are working
   c. To a maximum heating temperature of 42 degrees C if no rapid infusion device is used (Maximum heating temperature with a rapid infusion device is 37 degrees C)
   d. If the machine has had a quality control done by Medical Engineering in the past 12 months
   e. All of the above

6. The minimum requirements to meet transfusion safety include:
   a. Vital signs to be done before spiking each unit of product, 15 minutes after starting each unit and at the end of the transfusion of each unit
   b. Transfusion reactions are immediately reported to the MD and Blood Transfusion Lab
   c. If a transfusion reaction occurs, the transfusion is stopped immediately, the line kept open with normal saline and the product is returned to the Lab
   d. Culturing all empty blood bags or other containers

* Lina D’Onofrio, Concurrent Session # 3B
7. Transfusion Related Acute Lung Injury (TRALI) could result in a severe and potentially fatal outcome. It must be ruled out whenever a patient shows signs of hypoxia during or after a transfusion. The clinical features of TRALI are:

a. Onset of dyspnoea, decreased oxygen saturation (of more than 5% from baseline), hypotension (30mmHg or more decrease from baseline), fever, new infiltrates on chest X Ray within 6-12 hours of commencing transfusion
b. Fever, productive cough which develops 48 hours after completion of a transfusion
c. Dyspnoea, orthopnoea, cough and wheezing 24 hours after completion of transfusion
d. Distended neck veins

8. All of the following transfusion reactions must be reported stat to an MD and the Blood Transfusion Lab EXCEPT:
   a. Temperature increase of 1 degree Centigrade or more from baseline
   b. Temperature of less than 1 degree with no other findings
   c. Chills, rigors with or without a temperature increase
   d. Shortness of breath
   e. B and c

9. The patient’s name and MRN must be checked:
   a. armband to specimen label before the blood draw
   b. armband to specimen label before and after the blood draw
   c. only if you don’t know your patient very well
   d. after the blood draw when you go to the computer to print labels

10. If red cells are ordered for a patient, the test performed by Blood Bank is called a
    a. group and screen
    b. crossmatch (which includes a group and screen)
    c. cold agglutinin test
    d. direct antibody test (DAT)

11. Platelets, fresh plasma, red cells, autologous blood and cryo are transfused via a y type transfusion set with inline filter with a size between
    a 160-270 microns
    b. 40–50 microns
    c. platelets need only 40–50 microns, rest need 160-270 microns
    d. none of the above

12. Rigors could be a sign of which of the following:
    a. hemolysis
    b. bacterial contamination of the blood product
    c. febrile neutropenia- so therefore not reportable if patients have this history
    d. a and b
    e. all of the above

13. All lines used for transfusion must be primed with normal saline except for:
    a. albumin

* Lina D’Onofrio, Concurrent Session # 3B
b. cryoprecipitate
c. intravenous immunoglobulin
d. none of the above

14. A patient is ordered 2 units of FFP- the sample you will need to send to Blood Bank will be for:
   a. group and screen only
   b. crossmatch (which also includes group and screen)
   c. no sample is required for these products
   d. Coombs test

15. Antibody screen (which is part of the group and screen) is routinely performed to determine if:
   a. previous exposure by pregnancy resulted in red cell antibodies
   b. previous exposure by blood products resulted in red cell antibodies
   c. both a and b
   d. cold antibodies are evident
   e. all of the above

16. A temperature increase of 1 degree C or more from baseline is reportable in real time because it can be the earliest sign of:
   a. hemolysis
   b. new antibodies
   c. non hemolytic reaction (“febrile non hemolytic”)
   d. all of the above

17. The maximum total transfusion time/infusion time for a unit of any platelets, packed red cells, autologous blood, and fresh plasma is:
   a. 4 hours following issue from Blood Bank
   b. 24 hours following arrival from Blood Bank
   c. 8 hours following issue from Blood Bank
   d. 6 hours following arrival from Blood Bank

18. For clotting factor continuous infusions, the maximum time for each infusion bag to run following mixing/reconstitution is:
   a. 24 hours
   b. 12 hours
   c. 10 hours
   d. 8 hours

19. The filter chamber on transfusion tubing is to be covered by the priming solution:
   a. completely
   b. half way leaving chamber partly exposed to air in the chamber but still avoiding air in the line
   c. 1/3 of the way
   d. optional depending on vascular access policy

20. It is important to start each unit slowly (approximately 50 cc/hour for the first 15 minutes or as ordered) because
   a. serious reactions often occur during this initial phase
b. to test the integrity of the line  
c. to test the integrity of the filter  
d. all of the above  

21. Why is saline contraindicated for priming lines for, and infusing IVIG?  
   a. Saline precipitates sugar molecules in IVIG  
   b. Saline binds with proteins in IVIG  
   c. Saline alters the IgA content of IVIG  
   d. Saline becomes a vesicant if mixed with IVIG  

22. The correct way to spike and unspike blood product bags is:  
   a. To spike: quarter turn anticlockwise and repeat quarter turns until achieving blood flow  
   b. To unspike: quarter turn clockwise and repeat quarter turns until spike is removed  
   c. No need to use the quarter turn technique just push and pull – no risk of overspiking with blood bags  
   d. Spike by repeated single quarter turns clockwise and unspike by anticlockwise single quarter turns - repeat quarter turns as required  
   e. None of the above – each tubing spike is different  

23. Please answer true or false  

   There is no need to stop a transfusion if the patient “just has a few hives”  

   A change in systolic blood pressure (SBP) of 20mm greater or less than the baseline SBP is reportable STAT to an MD and Blood Bank  

   A change in systolic pressure of 20mm greater or less than the baseline SBP is reportable STAT to an MD only  

   A patient has a fever during transfusion at 0200 but the nurse does not want to disturb the patient up to take blood for a transfusion reaction workup until 0700- the patient can still be transfused with the next prescribed blood product during the night  

   An oxygen saturation decrease of 5% or more is not reportable to Blood Bank unless it happened during the transfusion  

   Red wine coloured urine 12 hours after a red cell transfusion does not need to be reported to Blood Bank  

   I am very familiar with my patient’s care needs and history- therefore I am less likely to make an error  

24. If a patient is Group O pos, he/she can receive which of the following groups for fresh frozen plasma  
   a. AB  
   b. B  
   c. All ABO types  
   d. O only
25. If a patient is A negative, he/she can receive which groups of red cells?

a. O negative
b. O positive
c. A negative
d. a,b and c
e. a and c

26. Trauma blood is prescribed if the patient with serious bleeding cannot wait for a crossmatch. The ABO/Rh group for trauma/uncrossmatched blood is always:

a. 0 negative
b. 0 negative or 0 positive *depending on supply and whether patient is male or female and if the female patient is of child bearing age or not
c. AB negative
d. AB positive

27. Rhesus immunoglobulin (RHIG) may be prescribed for:

a. Rh negative women post partum and in some cases predelivery
b. Rh negative patients who receive Rh positive platelets when Rh negative platelets are not available and this is approved by the MD
c. All Rh negative patients receiving a bone marrow transplant
d. certain types of thrombocytopenia
e. a and b and d

28. Irradiated blood products (red cells, platelets) are prescribed for some patients to reduce the risk of:

a. hemolysis
b. graft versus host disease
c. sepsis
d. allergic reactions

29. Some blood products can be washed to reduce the risk of:

a. hemolysis
b. graft versus host disease
c. sepsis
d. allergic reactions

Lina D’Onofrio, RN, MN
Clinical Nurse Specialist Patient Safety/Blood Transfusions Services
University Health Network
Ph (416) 340 4800 ext 4728

Lina.D’Onofrio@uhn.on.ca
September 2008