REVISION MCQs

1. The transfusion of directed donor RBC units has been shown:
    a. To reduce the cost associated with donor testing
    b. To reduce the risk of transfusion-associated HCV
    c. To reduce the risk of TA-GVHD
    d. To reduce the risk of RBC alloimmunization
    e. To provide no transfusion safety benefit*
2. The most recent blood donor testing introduced to reduce transfusion-transmitted infection in the US is:
    a. ELISA for vCJD
    b. Screening for bacterial contamination of platelet products*
    c. NAT for HIV
    d. ELISA for HCV
    e. Bacterial culture of RBC units
3. The use of leukoreduced RBC units has been shown to:
    a. Reduce the incidence of febrile nonhemolytic transfusion reactions
    b. Reduce the transmission of leukocyte associated viruses such as CMV
    c. Reduce HLA sensitization
    d. Protect against TA-GVHD*
    e. Increase the cost of RBC transfusion
4. Transfusion-related acute lung injury (TRALI) is characterized by:
    a. Beet-red urine
    b. Tongue swelling
    c. Low back pain
    d. Shortness of breath*
    e. Cardiomegaly
5. The current most common cause of transfusion-related death is:
    a. TRALI
    b. TA-GVHD
    c. Platelet refractoriness
    d. Bacterial sepsis
    e. AHTR*
6. Platelet concentrates are stored at room temperature because:
    a. Platelets cannot be transfused through a blood warmer
    b. The pH of platelet concentrates is better preserved at room temperature
    c. Platelets store at 4C have poor <u>in</u> <u>vivo</u> survival after transfusion*
    d. Inadvertent bacterial contamination becomes clinically relevant less quickly at room temperature than when stored 2-6C

e. Plasma protein solubility is superior at room temperature

7. Platelets, Pheresis (AKA single donor platelets):
    a. Contain approximately the same number of platelets contained in 10 U of random donor platelets
    b. Are less likely to transmit viral disease than one unit of random donor platelets
    c. Have not been reported to cause TA-GVHD
    d. Cost more than one unit of random donor platelets*
    e. Have not been reported to cause TRALI

8. A premature (900 gm) infant is predicted to require several small volume transfusions over the first several weeks of life. The initial RBC typing is A, Rh(D)+ and the antibody screen is negative for maternally derived antibody. Based on these findings:
    a. Additional RBC transfusion will require a new sample for type and crossmatch
    b. Another blood specimen for type and crossmatch is required after 2 months of age
    c. Another blood specimen for type and crossmatch is required after 4 months of age*
    d. The infant should be evaluated for congenital immunodeficiency
    e. All red cell transfusions should be washed

9. Cryoprecipate:
    a. Can be stored after thawing at room temperature for 48 hours
    b. Is the treatment of choice for infants with type 2 vWD who bleed with circumcision
    c. Contains F.VIII, F.IX, and vWF
    d. Is a good source for F.XIII and fibrinogen*
    e. Can undergo viral inactivation in a laboratory microwave

10. A full term, 1 day old female newborn infant has a specimen sent to the blood bank for Type and Screen. The results show that the patient is group A, Rh(D) negative, and the antibody screen is weakly positive. An antibody identification panel reveals anti-D. The infant's hemoglobin and bilirubin are normal. The most likely explanation of this finding is:
    a. The Rh typing is in error, and the infant is really Rh(D) positive
    b. The infant has received a materno-fetal transfusion.
    c. The infant's mother if Rh(D) negative and received Rh immunoglobulin in the third trimester of the pregnancy*

d. The infant has hemolytic disease of the newborn due to transplacental anti-D antibody from her mother, who must be Rh(D) negative
e. The findings are normal for age

11. An absolute indication for gamma irradiation of all cellular blood products would exist for a patient with:
    a. Diamond-Blackfan anemia
    b. Henoch-Schoenlein purpura
    c. Systemic Lupus Erythematosus and nephritis treated chronically with corticosteroids
    d. Congenital IgA deficiency
    e. Severe Combined Immunodeficiency*

12. A 5-month-old male infant has a specimen sent to a blood bank for Type and Screen and a request for 2 units of packed red blood cells to be crossmatched. The results of the initial testing are as follows:

    Patient Red cells + anti-A reagent: 3+
    Patient Red cells + anti-B reagent: Negative
    Patient Red cells + anti-D reagent: 3+
    Patient serum + group A red cells: Negative
    Patient serum + group B red cells: Negative
    Direct antiglobulin test: Negative

    The most likely interpretation of these results is:
    a. Expected results for Group A, Rh (D) positive infant*
    b. Discrepancy in the forward and reverse ABO typing results due to laboratory error
    c. Group A, Rh(D) positive with subgroup of A
    d. Group AB, Rh (D) positive with subgroup of A.
    e. Absence of isohemaglutinins suggests child may have Wiskott-Aldrich syndrome

13. A 28-month-old white female with precursor B-cell ALL is 7 days post IV methotrexate. WBC = 0.7, Hgb = 6 g/dl, and platelets = < 10,000/µL. She has a fever to 102 ºF, mild epistaxis, hypotension, and has just been transferred to the pediatric intensive care unit. What is the next step after blood pressure restoration and antibiotic administration?

A) Order type and crossmatch for pRBCs and platelets and administer immediately.
B. Order type and crossmatch for leukoreduced, irradiated pRBCs and platelets, and administer immediately.
C. Obtain consent, order type, and crossmatch for leukoreduced pRBCs and platelets, and administer immediately.

D. Obtain consent, order type, and crossmatch for leukoreduced, irradiated pRBCs and platelets, and administer immediately.

E. Obtain consent, order type, and crossmatch for leukoreduced, irradiated pRBCs and volume-reduced platelets, and administer immediately

14. Packed red blood cells:
    a. Must be leukoreduced at the time of transfusion
    b. Have a 1 in 50,000 chance of being contaminated with bacteria
    c. Have a shelf life of 42 days when stored in AS
    d. May be stored at room temperature for 48 hours if necessary
    e. Should be transfused within 1 hour of issue from the Blood Bank

15. Platelet refractoriness

Failure to achieve a rise in platelet count following platelet transfusion may be due to all of the following except:
    a. Fever
    b. The presence of platelet specific alloantibodies
    c. The presence of HLA antibodies
    d. Splenomegaly
    e. Presence of passenger RBC in platelet product

16. Which of the following is true?
    a. Platelets must be transfused within 5 days of collection
    b. Platelets can be frozen for up to one year
    c. Platelets are usually stored at 32-24C
    d. Platelets cannot be split into aliquots since this causes platelet agglutination

17. Acute hemolytic transfusion reactions:
    a. Are rarely fatal
    b. Occur less commonly than transfusion-transmitted HIV
    c. Are usually due to clerical error
    d. Are best treated with automated red cell exchange
    e. May be prevented by pre-treatment with corticosteroid

18. The presence of passenger leukocytes is responsible for all of the following adverse events except:
    a. Transfusion-associated graft versus host disease
    b. Anaphylaxis
    c. Fever
    d. CMV transmission
    e. HLA-immunization

19 Transfusion associated graft versus host disease
    a. Is rarely fatal
    b. Can be prevented by leukoreduction of cellular blood products prior to transfusion

c. Can be prevented by irradiation of cellular blood products prior to transfusion
d. Can only be prevented by combining leukoreduction and irradiation prior to transfusion
e. Is treated by high dose IVIg infusion

20. _____Know the common alloantibodies that develop in children with sickle cell disease receiving transfusions

A 10-year-old girl with sickle cell disease transfers her medical care to your hospital. Her past medical history is significant for having received 14 previous transfusions for complications including splenic sequestration, acute chest syndrome and aplastic crisis due to parvovirus infection. Her last RBC transfusion was 2 years previous to this visit. As part of routine care, you send a baseline RBC antigen profile and an antibody screen. The antigen screen is positive. Of the following RBC alloantibodies, which is most likely to develop in this child?

A. Anti-M
B. Anti-Jka
C. Anti-B
D. Anti-C *
E. Anti-Fya

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