TRANSFUSION JEOPARDY

DEPOSIT and WITHDRAWAL	PULLING THE TRIGGER	POSSIBLE SEQUELAE	ANTI-RED MOVEMENT	SMELLY STICKS
$100	$100	$100	$100	$100
$200	$200	$200	$200	$200
$300	$300	$300	$300	$300
$400	$400	$400	$400	$400
$500	$500	$500	$500	$500

DEPOSIT AND WITHDRAWAL - $100

This is the difference between a Type and Screen and a Type and Cross.

What is: Type and screen determines the patient ABO and Rh type and screens for minor known antigens on the patient's blood.

Cross matching takes a donor blood that you have also screened and think should be compatible with your recipient and mixes it together to look for agglutination? (Manual vs Electronic Crossmatching)

DEPOSIT AND WITHDRAWAL - $200

This process is now done to all blood products in the blood bank and has reduced the chance of febrile non-hemolytic reactions and CMV infections.

What is leukoreduce (removing as many white blood cells as possible from the unit of blood product to be transfused)?

DEPOSIT AND WITHDRAWAL- $300

This is the expected rise in hemoglobin for one unit of pRBCs transfused, ***this*** is the expected rise in platelet count for one single donor unit transfused, and **this** is the lowest INR an appropriate transfusion of FFP will correct to.

What is:

1) 1 g/dL increase in hemoglobin concentration,
2) 10,000-20,000/uL increase in platelet count, and
3) INR of 1.5

DEPOSIT AND WITHDRAWAL- $400

Your 25-year-old male patient presents with fatigue, pagophagia, and a severe iron deficiency anemia with a hemoglobin of 5 g/dL. You decide to transfuse him with a unit of pRBC, and 15 minutes into the transfusion, you are called that the patient is having bronchospasm and hypotension. You immediately stop the infusion, evaluate the patient and determine that the patient is having an anaphylactic reaction to the transfusion.

This is the condition that you suspect the patient might have and ***this*** is how you make the diagnosis.

What is celiac disease with IgA deficiency and order an IgA level?

BONUS: What will you do to prevent this reaction in the future if the patient needs a transfusion?

DEPOSIT AND WITHDRAWAL- $500

In addition to allogeneic hematogenous bone marrow transplant transplant patients,
these are 2 of the 4 situations for which to specify and transfuse ***irradiated*** blood products in your patient to prevent Graft versus Host Disease. (GVHD)

Who are patients with the following:
1. Severe combined immunodeficiency (SCID)
2. Hodgkins lymphoma
3. Receiving or received purine or purine-like antagonist treatment such as fludarabine or bendamustine (CLL therapy)
4. Receiving or having received a potent T-cell inhibitor therapy such as alemtuzumab (anti CD-52) and anti-thymocyte globulin (ATG) for cellular rejection of a kidney transplant

PULLING THE TRIGGER- $100

According to the AABB, ***this*** is the threshold hemoglobin concentration at which a hospitalized pediatric or adult patient should be considered for blood transfusion, and ***this*** is when the hemoglobin level should should be checked after the one unit has been transfused to determine if another unit is necessary.

What is:
7 gm/dL of hemoglobin or less, and
What is 15 minutes after the unit is transfused?

PULLING THE TRIGGER- $200

This is the hemoglobin concentration at which patients with chest pain, orthostatic hypotension, tachycardia unresponsive to fluid resuscitation, or congestive heart failure should be considered for transfusion.

What is 8 g/dL hemoglobin or less?

PULLING THE TRIGGER- $300

According to the AABB, ***this*** is the hemoglobin concentration at which a patient who is hemodynamically stable but who is having an acute coronary syndrome should be considered for transfusion.

What is currently no recommendation?

PULLING THE TRIGGER - $400

A *hospitalized* adult patient with thrombocytopenia should be transfused prophylactically to prevent a spontaneous hemorrhage when the platelet count is ***this*** or less, according to the AABB guidelines.

What is 10×10^4 ?
(10,000 or less)

PULLING THE TRIGGER- $500

According to the AABB, a patient with a platelet count less than ***this*** should be transfused with platelets in order to safely perform a diagnostic or therapeutic lumbar puncture.

What is 50×10^4 ?
(Less than 50,000 should be given platelets)

POSSIBLE SEQUELAE - $100

The nurse calls you to evaluate a patient who is receiving an RBC transfusion. The patient has had an increased temperature of 1° Celsius and is experiencing chills. You suspect a febrile non-hemolytic reaction. These are the four things you do to manage the patient at this time.

What is:

1) Stop the transfusion
2) Keep the IV open with fluids running
3) Re-confirm the patient ID and blood product ID match
4) Evaluate the patient for cardiovascular status, respiratory status, and urticaria/angioedema

POSSIBLE SEQUELAE - $200

You are called to see a patient with a transfusion reaction. The patient developed mild swelling of the lips and eyes approximately 15 minutes after the transfusion started. A diffuse urticarial rash is noted on skin exam.

This is the type of blood product that was most likely being transfused at the time of the allergic reaction.

What is platelet transfusion?
(302 per 100,000)
Histamine release, activation of mast cells

POSSIBLE SEQUELAE- $300

These four clinical events are the most common adverse events that occur with blood transfusion, with an approximate incidence of 1:100 units transfused.

What are:

1) Febrile non-hemolytic reactions
2) Allergy/urticaria
3) Transfusion Associated Circulatory Overload (TACO)
4) RBC Alloimmunization

POSSIBLE SEQUELAE- $400

This is the thought to be the two-hit mechanism of TRALI (transfusion related acute lung injury, the leading cause of transfusion related mortality), and ***this*** is a blood banking strategy that is thought to help prevent the incidence of TRALI reactions.

What is:

1) “Priming” of recipient neutrophils in the lungs by endothelial lung damage and

2) “Activation” of recipient neutrophils by donor plasma HLA and anti-neutrophil antibodies which causes lung injury, and

What is:

1) Excluding multiparous women from donating plasma-rich blood products and

2) Not allowing donors to donate if their blood triggered a TRALI reaction in a patient

POSSIBLE SEQUELAE- $500

A patient with sickle cell anemia is transfused 2 units of RBC during a hospitalization for acute sickle pain crisis. Approximately two weeks after hospital discharge, he develops scleral icterus and fatigue and dyspnea with exertion and comes to your clinic for evaluation. With questioning, he tells you that his urine has been darker than normal over the past few days.

The patient's vital signs are normal except for a mild resting tachycardia of 105. Scleral icterus is noted. Labs are significant for a hemoglobin of 5.7 g/dL (normal 8-9 g/dL). Total bilirubin is 6 mg/dL, direct bilirubin is 1.3 mg/dL. Reticulocyte count is 20%.

This is the diagnosis and ***this*** is the mechanism of action of his worsening anemia.

What is a delayed hemolytic transfusion reaction and what is an amnestic immune response when the patient is given a transfusion with a red cell unit that expresses a minor antigen that the patient has an antibody against?

ANTI-RED MOVEMENT - $100

Your patient presents with thrombocytopenia, acute renal failure, and microangiopathic hemolytic anemia with schistocytes on peripheral smear. You correctly suspect TTP as the cause of the patient's presentation.
You are in a remote area and hematology and renal consultation services are unavailable. ***This*** is the blood product you give while you are arranging transport to a higher level of care.

What is:
Fresh Frozen Plasma (FFP)?

ANTI-RED MOVEMENT- $200

Your patient has drug related bone marrow suppression and her platelet count is 21,000. She is undergoing an excisional muscle biopsy and requires 2 units of single donor platelets to get her platelet count above 50,000 for the procedure.

Thirty minutes after the second platelet unit is infused she spikes a temperature to 40^0 Celsius and has rigors and headache. Her heart rate is 130 while febrile. Based on your knowledge from Academic Half Day Transfusion Jeopardy, ***this*** is what you suspect and ***this*** is what you do next.

What is bacterial contamination of the platelets causing sepsis picture, and what is culture the patient and the blood products and notify the blood bank?

ANTI-RED MOVEMENT- $300

Your patient has alcohol related decompensated cirrhosis and has developed a large hepatic hydrothorax with hypoxemia and respiratory difficulties. He is refractory to diuretics and needs a therapeutic thoracentesis. His PT and INR are prolonged (INR is 3.5) you need to correct it to less than 2 for radiology to perform a thoracentesis. You give the patient 2 units of FFP, and then 2 more units of FFP and the INR will not go below 2.5. You are starting to volume overload your patient and are afraid he will need to go to the ICU to be intubated.

This is what you should have ordered and ***this*** is the blood product you might have needed to give to help correct the coagulopathy.

What is a fibrinogen level and what is cryoprecipitate if the fibrinogen level was < 100 mg/dL?

ANTI-RED MOVEMENT- $400

These are two causes of thrombocytopenia for which a platelet transfusion is absolutely contraindicated.

What is HIT-T (heparin induced thrombocytopenia with thrombosis) and what is thrombocytopenic thrombotic purpura (TTP)?

ANTI-RED MOVEMENT- $500

Your patient has AML and is undergoing her 3rd cycle of maintenance chemotherapy. She has required multiple transfusions of red cells and platelets since diagnosis and now, when you give her a unit of single donor platelets to prevent spontaneous hemorrhage, her platelet count does not rise as expected.

This is the condition that the patient has, and ***this*** is the type of platelets you must order in the future to help prevent the patient from quickly destroying her transfused platelets.

What is platelet alloimmunization and what is HLA-matched platelets are required for future transfusions?

SMELLY STICKS- $100

You are consenting a patient for a blood transfusion and she asks you what her risks are of becoming infected with HIV, hepatitis B, or hepatitis C from the transfusion. ***This*** is what you tell her.

What is the following:
Hepatitis B: 1: 1,200,000
Hepatitis C: 1: 2,000,000
HIV: 1: 2,000,000?

The odds of being injured with a toothbrush 1:100,000
Struck by lightening: 1:700,000
Dating a supermodel: 1:880,000

SMELLY STICKS- $200

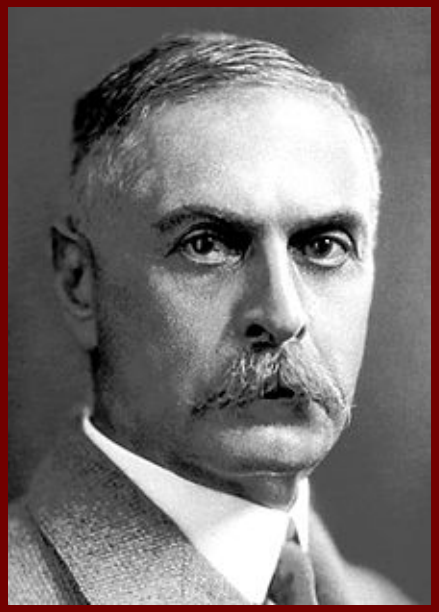
This is the allowable storage time for
RBC,
FFP,
and platelets
in a blood bank today.

What is:
42 days for RBCs,
1 year for FFP, and
5 days for platelets?

SMELLY STICKS- $300

This Austrian physician discovered the first three human blood groups (A, B, and 0), in 1900 and received the Nobel Prize for Medicine in 1930 because of it.

Who is Dr. Karl Landsteiner?



SMELLY STICKS- $400

In 1962, the first hemophilia factor concentrates were developed to treat coagulation disorders in hemophilia patients and ***this*** is when the first blood screening test to detect HIV was licensed and implemented.

When was 1985?

SMELLY STICKS- $500

This is the city and ***this*** is the hospital in the United States where the first “blood bank” was established by Dr. Bernard Fantus in 1937.

Where is Cook County Hospital, Chicago, Illinois?