

MLAB 2461 Clinical II
IMMUNOHEMATOLOGY
ACTIVITY 12: PANEL CASE STUDIES

Name _____

You are *strongly* encouraged to work through the 9 case studies found in your textbook chapter 10 (pages 161-193) as well as read the appropriate material in this chapter prior to completing the attached panel studies. If you are having problems working through these panel studies make an appointment with me **ASAP**. Panel studies are very difficult to comprehend initially and many students come to me for help in this particular area.

INSTRUCTIONS:

You will find attached 10 panels and a set of questions for each panel. At the top of each page of questions is a brief history on the patient. **READ THE HISTORY**, as this may give you a clue as to the antibody specificity and/or clinical significance. Keep in mind that all patients had positive screens.

1. Read the history
2. Interpret the panel.
3. Answer the appropriate questions for each panel.
4. **Antigen Typing - READ THE FOLLOWING CAREFULLY:**
 - a. The patient **MUST** be antigen typed. The expected reaction is negative. Why?
 - b. If the **donor** is not required to be antigen type put "NA" in the column
 - c. If donor **does** need to be antigen typed state the antigen(s), *expected reaction for typing a compatible donor*.

PART ONE:

1. Which antibody class is considered clinically significant? (0.5)

2. List the blood group antigens to which patients most frequently produce immune antibodies. (3)

3. What class of antibody is considered "naturally occurring"? (0.5)

4. List the blood group antibodies that, when detected, are *usually* considered "nuisance" or "clinically insignificant"? (3)

PANEL 1

A 26 year old is admitted into the Labor & Delivery department. This is her second pregnancy. A routine Type and Screen is ordered on the patient.

1. What is the specificity of the *primary* antibody (the one that fits the pattern *exactly*). (1)

2. List the *additional* antibody specificities which may be masked or covered up by the primary antibody based on your evaluation of the phase of reactivity. (0.5)

3. List the possible antibodies from number 2 above which would require additional testing to confirm or rule out their presence. (0.5)

4. Why did the strength of reactivity decrease at 37C and no reactivity was observed at the AHG phase? (0.5)

5. For this particular antibody specificity what additional test would be *most* helpful to ensure that no additional antibodies were present, ie, how would you eliminate the reactivity of this antibody? (0.5)

6. You receive a call from the baby's pediatrician. What will you tell her as to the clinical significance of this antibody and the possibility of HDN? (1)

7. What is unusual about this antigen and pregnancy?(0.5)

8. Antigen typing (see page 1, #4 of instructions) (2 points):

	Antigen(s) to Test For	Expected Reaction
Patient		
Compatible Donors		
Cell # to use for Positive Control		
Cell # to use for Negative Control		

PANEL 2

A 65 year old male has come in for pre-admission testing. He is having a quadruple bypass in 3 days. He states that he was transfused with 10 units of blood 25 years ago after a car wreck.

1. What is the specificity of the **primary** antibody (the one that fits the pattern **exactly**). (1)
2. List the **additional** antibody specificities which may be masked or covered up by the primary antibody based on your evaluation of the phase of reactivity of this particular antibody specificity. (1)
3. List the possible antibodies from number 2 above which would require additional testing to confirm or rule out their presence. (1)
4. State *the most logical reason* for the varying strengths of reactions in the panel. (0.5)
5. Is this antibody considered clinically significant? **Why?** (1)
6. Antigen typing (see page 1, #4 of instructions) (2 points):

	Antigen(s) to Test For	Expected Reaction
Patient		
Compatible Donors		
Cell # to use for Positive Control		
Cell # to use for Negative Control		

PANEL 3

A 15 year old male has been admitted to your facility with appendicitis. A pre-operative Type and Screen has been ordered. The patient states that he has never been transfused.

1. What is the specificity of the **primary** antibody (the one that fits the pattern **exactly**). (1)

2. List the **additional** antibody specificities which may be masked or covered up by the primary antibody based on your evaluation of the phase of reactivity of this particular antibody specificity. (0.5)

3. List the possible antibodies from number 2 above which would require additional testing to confirm or rule out their presence.(0.5)

4. Give an explanation for the varying strengths of reactions.(0.5)

5. Why were negative reactions obtained in the AHG phase of testing? (0.5)

6. For this particular antibody specificity what additional test could be utilized to increase the strength of reactivity of this antibody? (0.5)

7. Antigen typing (see page 1, #4 of instructions) (2 points):

	Antigen(s) to Test For	Expected Reaction
Patient		
Compatible Donors		
Cell # to use for Positive Control		
Cell # to use for Negative Control		

PANEL 4

A 56 year old female has been admitted to your facility. She has a hemoglobin of 5.5 g/dL due to treatment of her leukemia. She has been pregnant 3 times and states that her last 2 children became jaundiced a few days after birth. She states that she has “special” blood but could not give any additional, helpful details. She does not remember the name of the hospital where her children were born.

1. What is the specificity of the *primary* antibody(s). Evaluate **BOTH** panels to answer this question. (2 points)
2. List the *additional* antibody specificities which may be masked or covered up by the primary antibody based on your evaluation of the phase of reactivity of this particular antibody specificity. (1)
3. List the possible antibodies from number 2 above which would require additional testing to confirm or rule out their presence. Evaluate **BOTH** panels to answer this question. (0.5)
4. Why was the ficin panel done? (1)
5. List each primary antibody and state its clinical significance. (1)
6. What additional antigen should this person be tested for? Why? (1)
7. How many donor units will you need to screen to find two units negative for the antigen(s) the patient has antibodies directed against? (0.5)
8. Antigen typing (see page 1, #4 of instructions) (2 points):

	Antigen(s) to Test For	Expected Reaction
Patient		
Compatible Donors		
Cell # to use for Positive Control		
Cell # to use for Negative Control		

PANEL 5

A 19 year old female has been admitted to your facility in sickle cell crisis. The patients hematocrit is 15%. The physician has ordered 4 units of blood to be given ASAP. The patient has not ever been pregnant but has been chronically transfused over the years due to the sickle cell disease. She states that it has taken time in the past to get blood ready but she doesn't know why. She has just recently moved here from Alaska.

1. What is the specificity of the **primary** antibody (the one that fits the pattern **exactly**).
2. List the **additional** antibody specificities which may be masked or covered up by the primary antibody based on your evaluation of the phase of reactivity of this particular antibody specificity.
3. List the possible antibodies from number 2 above which would require additional testing to confirm or rule out their presence.
4. Give an explanation for the varying strengths of reactions at the AHG phase.
5. Has this antibody been implicated in HDN and HTRs?
6. What is the frequency of this antigen? How difficult will it be to find compatible donors?
7. Antigen typing (see page 1, #4 of instructions):

	Antigen(s) to Test For	Expected Reaction
Patient		
Compatible Donors		
Cell # to use for Positive Control		
Cell # to use for Negative Control		

PANEL 6

A 44 year old female has been admitted to your facility in labor with her 8th child. She states that 2 of her 7 other children had developed jaundice a few days after birth.

1. What is the specificity of the **primary** antibody (the one that fits the pattern **exactly**). (1)

2. List the **additional** antibody specificities which may be masked or covered up by the primary antibody based on your evaluation of the phase of reactivity of this particular antibody specificity. (1)

3. List the possible antibodies from number 2 above which would require additional testing to confirm or rule out their presence. (0.5)

4. Is the antibody you listed in #1 considered an immune antibody? (0.5)

5. What will you tell the pediatrician as to the clinical significance of this antibody? (0.5)

6. Antigen typing (see page 1, #4 of instructions) (2 points):

	Antigen(s) to Test For	Expected Reaction
Patient		
Compatible Donors		
Cell # to use for Positive Control		
Cell # to use for Negative Control		

PANEL 8

An 86 year old male has been admitted to your facility with pneumonia. The patient's hemoglobin is 6 g/dL. The physician has ordered 2 unit of blood to be transfused. The patient states that he has never been transfused.

1. What is the specificity of the **primary** antibody (the one that fits the pattern **exactly**). Be sure to evaluate all testing done on this patient. (1 points)

2. What was the purpose of including the cord cells as part of the testing in this particular problem? (0.5)

3. Which test should be performed next to *eliminate the reactivity* of this particular antibody specificity? Describe this procedure in detail.
 - a. Name of test to perform (0.5):

 - b. Describe procedure step-by-step (2):

4. Can this antibody cause HDN or HTR's? (0.5)

PANEL 9

A 36 year old female has been admitted to your facility for a transfusion of platelets and 4 units of red blood cells. The patient states that she has never been pregnant but has been transfused several times this past year due to her chemotherapy. There have been no problems prior to this.

1. What is the specificity of the **primary** antibody (the one that fits the pattern **exactly**). (1)
2. List the **additional** antibody specificities which may be masked or covered up by the primary antibody based on your evaluation of the phase of reactivity of this particular antibody specificity. (1)
3. List the possible antibodies from number 2 above which would require additional testing to confirm or rule out their presence. (1)
4. Can this antibody cause HDN and HTR's? (0.5)
5. How difficult will it be to find 4 units of compatible red blood cells for the antibody(ies) you have listed in #1? **Explain your answer.** (1)
6. Antigen typing (see page 1, #4 of instructions) (2 points):

	Antigen(s) to Test For	Expected Reaction
Patient		
Compatible Donors		
Cell # to use for Positive Control		
Cell # to use for Negative Control		

PANEL 10

A 36 year old male has been admitted to your facility following a motor vehicle accident (MVA). Four units of blood have been ordered STAT. No additional history is available. You quickly perform the crossmatch and discover a positive screen. All units appear compatible. You quickly perform the panel study.

1. What is the specificity of the **primary** antibody (the one that fits the pattern **exactly**). (1)
2. List the **additional** antibody specificities which may be masked or covered up by the primary antibody based on your evaluation of the phase of reactivity of this particular antibody specificity. (1)
3. List the possible antibodies from number 2 above which would require additional testing to confirm or rule out their presence. (0.5)
4. Can this antibody cause HDN and HTR's? (0.5)
5. How difficult will it be to find 2 antigen negative donors for this patient? **Explain your answer.** (1)
6. Antigen typing (see page 1, #4 of instructions) (2 points):

	Antigen(s) to Test For	Expected Reaction
Patient		
Compatible Donors		
Cell # to use for Positive Control		
Cell # to use for Negative Control		