









- This will save the information.
- Only one question is highlighted at a time.



1130001		spear				
2. Spr	eaker 1	Excellent	Good	Average	Poor	
Speake Overall present	er Evaluation - I quality of tation					
Speake Knowle matter	er Evaluation - edge of subject				0	
Speake Organic presen	r Evaluation - zation of tation				•	
Course the ses	Evaluation - Rate Islon					
Course Achiev objecti	Evaluation - ed stated ves?				•	
3. Ple	ase comment o	n the speaker ar	nd course strengti	ns/weakness.		







Duestion 3 First pregnancy, mom is O neg, baby is A+ with +DAT. Which antibody is most likely the cause of the +DAT? A. anti-A B. anti-B C. anti-A,B D. anti-D











Conditions

- IgG cross placenta
 - IgG1 and IgG3 more hemolysis

Kall

- cause destruction of fetus' RBCs
 - asymptomatic to intrauterine death















































Genetic Code

BY P

First Base	U	C	A	G	Third Base
U	UUU - phe UUC - phe UUA - leu UUG - leu	UCU - ser UCC - ser UCA - ser UCG - ser	UAU - try UAC - try UAA - stop UAG - stop	UGU- cys UGC - cys UGA - stop UGG - trp	U C G
С	CUU - Ieu CUC - Ieu CUA - Ieu CUG - Ieu	CCU - pro CCC - pro CCA - pro CCG - pro	CAU - his CAC - his CAA - gln CAG - gln	CGU - arg CGC - arg CGA - arg CGG - arg	U C A G
A	AUU - ile AUC - ile AUA - ile AUG - met	ACU - thr ACC - thr ACA - thr ACG - thr	AAU - asn AAC - asn AAA - lys AAG - lys	AGU - ser AGC - ser AGA - arg AGG - arg	U C A G
G	GUU - val GUC - val GUA - val GUG - val	GCU - ala GCC - ala GCA - ala GCG - ala	GAU - asp GAC - asp GAA - glu GAG - glu	GGU - gly GGC - gly GGA - gly GGG - gly	U C G











Dw Positive Mom's and RhIg • Weak D types 1, 2, and 3 • can be treated as D+ in pregnancy

- D genotyping cost similar to unnecessary RhIg administration
 - AABB
 - College of American Pathologists
 - American College of Obstetricians and Gynecologists
 - Armed Services Blood Program







Nonfunctional D

- don't code for full-length polypeptides
- nulls
- no expression of D antigens

		2200
ABO/D HE	OFN Compari	son
	АВО	D
Antibody	anti-A,B; occ. anti-A, anti-B	anti-D
Anemia	absent or mild	severe
Spherocytes	increased	occasional
Retics	may be increased	increased
DAT	weak/neg	strong

		No.
BO/D HD	N Compari	son
	ABO	D
Bilirubin	slow rise / low mg%	rapid rise / can exceed 20 mg%
Jaundice	mild, appears late	severe, appears early
Exchange Transfusions	rare	usually
NRBC	increased	increased



■ ignore anti-P1, -Lea, -Leb, -I





Jane Smith

- titers
 - highest dilution 1+
 - titers > 16 clinically significant
 <16 unlikely to cause HDFN or hydrops fetalis
 - freeze 8/3 for future comparison
 - technique and RBC differences

	1	2	4	8	16	32	64	128	256	512	1012
8/3	1	+	0	0	0	0	0	0	0	0	0



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	1	2	4	8	16	32	64	128	256	512	1012
8/3	2	1	<u>+</u>	0	0	0	0	0	0	0	0
8/17	2	2	2	1	1	<u>+</u>	0	0	0	0	0





























Bilirubin and Cord Hgb major determinates bilirubin - current level, how fast rising cord hemoglobin oxygen carrying capacity; how severe is anemia

too low - clinical problems





















Component Choice

- ABO compatible RBCs
- resuspended in ABO compatible FFP
- <5-7 days old CPDA-1</p>
- may remove additive is using ADSOL
- hemoglobin S neg
- CMV reduced or negative
- irradiated









Antenatal Rhlg

PLA P

- 28 weeks 1 vial
- RhIg fetus may develop pos DAT, no hemolysis, low titer

Kar

- mechanism
 - anti-D attaches to D+ cells
 - macrophages in spleen clear cells
 - cytokine secretion and immunomodulation
- mom may have pos AbSc at deliveryanti-D from RhIg

Distinguish between IgM and IgG Dithiothreitol (DTT) or 2aminoethylisothiouronium bromide (2ME)

- treat plasma
- destroys IgM antibodies
- useful for anti-D RhIg (IgG) or primary response (IgM)
- useful for anti-M with rising titer
 - IgG or IgM



high false negatives













Example - FMH

A Y MA

- 26 fetal cells in 2000
- 26/2000 x 5000mL = 65 mL fetal whole blood

the second

- 65 / 30 = 2.2 doses
- safety factor
 - <.5, round down and add one vial</p>
 - >.5, round up and add one vial



Molecular testing-RBC phenotype test DNA for D antigen or *RHD* gene mother - RhIg candidate? fetus - HDFN candidate? avoid testing for rare units if fetus antigen negative anti-c or anti-e in mother find rare - r'r' (dCe) or r"r" (dcE) 2% <0.1 - 1%

Molecular testing-RBC phenotype

- amniocytes or cell free fetal DNA (cffDNA) in the mother
- test the father
 - homozygous father
 - 100% chance of children expressing antigen
 - heterozygous father
 - 50% chance of children expressing antigen























