

Antenatal antibodies

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Caring Expert Quality



HDFN

- "Virtually all antibodies reactive by IAT have been implicated in HDFN." (2)
- The Clinical Significance of Blood Group Alloantibodies and the Supply of Blood for Transfusion. (Nicole Thornton)
- The Rh blood group is the main of cause of HDFN. Rh antigens are highly immunogenic (1).
- Anti-D cause the most severe form of HDFN, followed by anti-c (1).





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Case 1 conclusion

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TYPICAL RESULTS

Absorbed with	Ter	st Cells	Conclusion
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R2R2 / Ro	0	0	
r	0	+	Anti-D + G
R2R2 / R.	0	0	and a second
r	0	0	Anti-C + G
R2R2 / Ro	+	0	
r	0	+	Anti-D + C +/- G
R2R2/Ro	+	0	Carlos and Carlos



Important Points

• Has the patient got an anti-D?

• If yes, is it passive or immune?

• Should the patient be receiving prophylaxis ?

• What about anti –C and anti-G (4)?



- Hospital sent mum's and baby's (cord sample) samples for an HDFN investigation.
- Baby was 2 days old and mum was a new patient for RCI.
- On mum's referral form, HTL stated that baby was born with strong positive DAT and mum had a antibody screen negative.
- On baby's referral form, HTL stated:
 - Baby had a positive DAT at birth;
 - Raised bilirubin;
 - Hb of 73 g/l (2 days after birth)

Case 2 HDFN investigation

Effective: 06/10/17 FORM FRM786/2.3 **Antibody Investigation Worksheet NHSBT Reagents** Panel 1 Tested by Sample Name Requestor Database Ref No. **Date Tested** Date of Birth Hosp no Sample No. Lot No. Lot No. Product Lot No. Product Lot No. Product Product Panel in LISP R146 3416 R163 3416 R144 3416 Panel in CellStab R143 3416 Panel in CellMedia Panel in Alsevers EXPIRY DATE: 2018.12.06 Panel Papanised in CellMedia R173 3416 Panel Papainised in CellStab Panel Papainised in Alsevers R154 3416 R153 3416 Jkb Leb Fy^a Fyb Jk^a Other BRIAT Rh M N S P1 Lua K k Kpa Lea S 1 R1WR1 0 0 0 0 + 0 + 0 + 0 + 0 + 0 + 2 R₁R₁ 0 4 0 + 0 0 + 0 + 0 + 0 + 0 + 0 0 + 3 R_2R_2 0 0 + 0 0 + + 0 + 0 + 0 0 0 0 + 0 0 + 4 r'r 0 + 0 + 4 0 + + 0 HLA+ 0 0 + + 5 r"r + 0 + 0 3 0 0 + 0 + 0 2 0 + + 6 rr + 0 0 + 0 + 0 0 0 + 7 0 0 + W 0 + 0 + rr 0 + 0 + 0 + + 8 rr + 0 0 + 3 0 0 + + 0 + 0 + + 0 0 0 + 0 2 0 0 + 9 rr 0 + 0 + + + + 0 0 2 0 0 0 0 + 0 + 0 + 10 + + + rr Auto \cap 0 RIRI 2 3 0 T 00 100 mane 8287 TI Pheno Group RICK-Antibody Titre ORhDROS Dilution: 6 26 517 it ZK 4K Cell Id Conclusion Anti-Archive Mum's sample Anti Archive **DAT Batch No** IgM C3c C3d Ctl PS IgG IgA Reporting BMS:..... Checking BMS..... Reagent naubatora Batch 37.60 No's 14006993 G:\009 DD&R\003 Red Cell Immunohaematology\001 Everyone\Reagent product profiles Pipette batch No's

Cross-Referenced in Primary Document: SOP883

Case 2 HDFN investigation

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RCI results – mum and baby

• First screen, confirms negative antibody screen and negative auto control for mum and strong positive DAT for baby with an non specific reaction in the baby's Eluate studies.

- What else do we need to think about?
- ABO incompatibility?
- What about antibodies to a Low Frequency Antigens (LFA)?

Case 2 further investigation

			Donation Serology	
Data retrieved us	sing multiple donatio	n numbers	Mum's results	SERVICE
			Page 1 of 1	Prepared On: 13:53:40 25/07/2018
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Case 2 - conclusion

- Mum has got an LFA anti -Wra
- Anti Wra found on baby's eluate
- HDFN caused by anti-Wra, samples were sent to IBGRL for confirmation of antibody and for mum and baby Wra Phenotype.
- Anti-Wra is a relatively common antibody to a LFA.
- Known to have caused HTR and severe HDFN.
- When detected IAT-compatible blood must be selected.

- Another Rh system antibody.
- The C^w antigen
 - Is C^w antigen on your screening cells?
 - Do you have enough cells to confirm presence?
 - Capable of causing HDFN?

Cases 3

Case reported by Martin Maley (Head of RCI – Newcastle).

- 2 cases within a year
- Both cases Mum has anti-C^w
- 1st case titre 1:32
- 2nd Case titre 1:8

- On Both cases partner and baby was C*+
- Both had HDFN and required exchange transfusion at delivery
- Not considered until baby born fortunately, blood is readily available.
- No further outcome data.

Anti-C^w lookback

- Looked at 2 years of data and it was found:
- 28 cases of maternal anti-C^w
- 26 had either documented C^w- partner, or C^w- baby
- 2 cases of incompatibility

Case 3 points to consider

- Should C^w be on screen cells?
- Anti-C^w and anti-C^x can cause moderated HDFN
- Other antibodies from Rh system can cause <u>severe</u> HDFN
- Do not overlook any antibody reactive by IAT, specially from the Rh system
- Back it up with evidence

- Rh blood group system can cause HDFN so don't ignore it.
- Important to distinguish Anti-D from anti-G
- Take into consideration antibodies to LFA (not present on screening or routine panel cells)
- Not all outcomes can be predicted
- Communication is key talk to us (RCI), talk to the FMU team, Consultants obstetrician... Communicate.

THANK YOU

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