

Lab Matters 20.06.2018

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Alloantibodies and pregnancy

Healthy baby



Baby with severe jaundice



ADAM

Alloantibodies and pregnancy



Alloantibodies and pregnancy

- BCSH guidelines 2016
- ABO and D typing
- Red cell antibody screening/identification

Screening cells C,c,D,E,e,K,k,Fy^a,Fy^b,Jk^a,Jk^b,M,N,S,s,Le^a

Homozygous expression of Rh, Fy, Jk, S antigens

- Follow up tests

Alloantibodies and pregnancy

MAIN RECOMMENDATIONS

- Sample labelling
- ABO and D grouping
- Antibody screens
- Timing of tests
(early in pregnancy and again at 28/40)
- Labs to keep records of anti-D administration

Alloantibodies and pregnancy

MAIN RECOMMENDATIONS

- FMU referrals
- Antibody Card
- Post delivery testing of babies
- Regular audit of practice



- Clinically significant antibodies (IgG)

- Anti-D
- Anti-c
- Anti-K
- Anti-C
- Anti-E
- Anti-Fya
- Anti-Jka
- Other antibodies

Alloantibodies and pregnancy

- Anti-D+C specificity
- Possible anti-G

Demonstrated by disproportionately high titres of anti-C

ALWAYS refer to a reference lab as patients with anti-G are still eligible for RAADP and post delivery anti-D Ig

Alloantibodies and pregnancy

- Techniques

 - CAT

 - Capture

 - Tube

- Paternal testing

- Fetal genotyping

- Referral to reference laboratory

Alloantibodies and pregnancy

- Anti-D quantification (NIBSC 2003)
- Differentiation between immune and prophylactic anti-D
- Test every 4 weeks to 28/40 then
- Test every 2 weeks to delivery

<4iu/ml

HDN Unlikely

4-15iu/ml

Moderate risk of HDN

>15iu/ml

High risk of hydrops fetalis

Alloantibodies and pregnancy

- Anti-c quantification (NIBSC 2003)
- Test every 4 weeks to 28/40 then
- Test every 2 weeks to delivery

<7.5iu/ml

Continue to monitor

7.5-20iu/ml

Risk of moderate HDN

>20iu/ml

Risk of severe HDN

Alloantibodies and pregnancy

- Anti-K titration
- Anti-K often present as a result of previous transfusion
- Severity not correlated with antibody titre
- Affected pregnancies usually titre of 32+
- Paternal sample K negative

Alloantibodies and pregnancy

- Other antibodies
- Many other specificities
- Repeat testing at 28/40
- No further testing recommended
- Medical decision regarding women with hx of HDN

Alloantibodies and pregnancy

Prophylactic anti-D



Alloantibodies and pregnancy

- Routine ante-natal anti-D prophylaxis (RAADP)
 - 1500iu at 28/40 gestation
- OR
- 500iu at 28/40 and again at 34/40

Alloantibodies and pregnancy

- **BCSH guidelines 2013**

Administration of anti-D immunoglobulin for the prevention of HDFN

- **NICE guideline 2008**

Routine antenatal anti-D prophylaxis for women who are rhesus D negative

- **RCOG guidelines 2011 (Archived)**

The use of Anti-D for Rhesus (D) prophylaxis

Alloantibodies and pregnancy

- ffDNA testing
- 16/40
- Results dictate issue of RAADP

Alloantibodies and pregnancy

Potentially sensitising events

- Amniocentesis, chorionic villus biopsy and cordocentesis
- Ante-partum haemorrhage/vaginal bleeding in pregnancy
- External cephalic version
- Fall or abdominal trauma
- Ectopic pregnancy
- Evacuation of molar pregnancy
- Intrauterine death and stillbirth
- In utero therapeutic interventions (transfusion, surgery, insertion of shunts, laser)
- Miscarriage, threatened miscarriage
- Therapeutic termination of pregnancy
- Delivery – normal, instrumental or Caesarean section
- Intraoperative cell salvage

Alloantibodies and pregnancy

- Miscarriage or painless PV bleeding at <12 weeks, no anti-D required unless surgical intervention
- T.O.P./Ectopic pregnancy/Molar pregnancy need PAD
- Any sensitising event after 12/40 gestation

regardless of whether RAADP has been given or is due to be given

- Guidelines say at least 250iu but thanks to our “friends” at BPL.....
- Between 12 – 20 weeks give 500iu
- >20 weeks perform Kleihauer (or flow) and give at least 500iu

Alloantibodies and pregnancy

A CAUTIONARY TALE

Alloantibodies and pregnancy

- Result at booking
- PAD issued for use at 28/40
- Result at 28/40
- rr test
- Delivery

Alloantibodies and pregnancy

CHANGES MADE

- Always check with midwives
- rr screening cells
- BMS band 6 or above to check results
- General paranoia