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Royal Cornwall Hospitals NHS
NHS Trust

Blood matters in pregnancy…

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What we provide

- Blood group & antibody screen
  - Routine testing
  - Testing following Ab production
- RAADP
- Kleihauers
- Postnatal testing
- Support in obstetric haemorrhage

Transfusion Medicine, 2007, **17**, 252–262 doi: 10.1111/j.1365-3148.2007.00767.x

GUIDELINES

Guideline for blood grouping and antibody testing in pregnancy

British Committee for Standards in Haematology Blood Transfusion Task Force
A. Gooch,* J. Parker,† J. Wray‡ & H. Qureshi§ *National Blood Service, Manchester, †Department of Haematology, Derby City Hospital, Derby, ‡University of Salford, Salford, Greater Manchester, and §Department of Haematology, University Hospitals of Leicester, Leicester, UK*

- Sample acceptance criteria same as pre-transfusion testing

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Adherence to a strict specimen-labeling policy decreases the incidence of erroneous blood grouping of blood bank specimens

J.A. Lumadue, J.S. Boyd, and P.M. Ness

TRANSFUSION

- Rejected samples tested for 1 yr
- Results compared to historical data
- Poorly labelled samples 40x more likely to be from wrong patient

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Blood grouping and red-cell alloantibodies

- Women should be screened for atypical red-cell alloantibodies in early pregnancy and again at 28 weeks, regardless of their rhesus D status.
- If a pregnant woman is rhesus D-negative, consideration should be given to offering partner testing to determine whether the administration of anti-D prophylaxis is necessary

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- All pregnant women should be ABO & Rh(D) typed early in pregnancy (10-16/40)
- This should be repeated at 28/40
- No further ***routine*** grouping/screening required

Why do we group?

- To identify Rh(D) Negative women

Why we don’t …

Group O

- Powerful leaders
- Goal-oriented
- Enthusiastic
- Optimistic
- Good at business

Group A

- Perfectionist
- Orderly
- Detail-oriented
- Industrious
- Idealistic
- Soft-spoken
- Careful

Group B

- Flexible
- Passionate
- Creative
- Unconventional
- Have excellent concentration

Group AB

- Natural leaders
- Great organizers
- Diplomatic
- Rational
- Imaginative.

Why we don’t …

Group O

- ‘First blood type’
- Hunter/Gatherers
- High protein
- Meat-based diet

Group A

- Agrarian
- Vegetarian-type diet

Group B

- Evolved after O & A
- Nomadic forebears
- Varied diet

Group AB

- ‘Last’ blood group
- Diet should be a ‘mixture of group A & B type diet’!

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Why we don't …

- O 'Visceral & intense. Carnal & primitive'
- A 'Green & aromatic, reassuring & clean'
- B 'woody & spicy, nomadic & eclectic'
- AB 'Synthetic & individualist, uninhibited & visionary'

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Antibodies

- Stimulated by
  - Blood transfusion
  - Pregnancy
  - Environmental factors

Why do we Ab screen?

- To identify foetuses at risk of HDN
- To predict the severity of HDN and plan treatment
- To identify potential transfusion problems

Ab's in pregnancy

- Anti-D, anti-c and anti-K are most often implicated in severe HDN
- Anti-D and anti-c should be monitored by antibody quantitation in iu/mL
- All other antibodies titrated

Ab's in pregnancy

- 'other' specificities
  - Next most likely to cause HDN:

    C, E, Fy^a, Jk^a
  - In general, a titre of 32 or greater is likely to cause HDN, but there is no definitive link between titre and HDN

Ab's in pregnancy

- Where antibody detected is anti-D, c or K
  - Re-test monthly to 28/40, then every 2 weeks to delivery
  - At delivery test placental blood for DAT
    - If positive test Hb & bilirubin

Ab's in pregnancy

- All other antibodies (other than D, c or K)
- Re-test once at 28/40
  - Sample should be screened for additional antibodies
- At delivery test placental blood for DAT
  - If positive test Hb & bilirubin

Sensitising events Rh(D) Neg's

- <12/40 – No Kleihauer, No anti-D
- <20/40 – No Kleihauer, give anti-D
- >20/40 – Kleihauer, give anti-D
- Post delivery (Rh(D) Pos or UK)

Cord blood testing

- Cord bloods on all infants delivered to Rh(D) Neg women & those with clinically significant antibodies
- DAT only performed in the presence of maternal antibody or significant jaundice

Cord blood testing

- Positive alone DAT is not diagnostic
- Problems post RAADP
- If DAT positive, lab should elute antibody

Summary

- ABO Rh(D) type to identify women eligible for RAADP
- Screen all women for red cell antibodies
  - Monitor those of clinical significance
- Cord group on children of Rh(D) neg women (and those with clinically significant antibodies)