SASUOG

South African Society for Ultrasound in Obstetrics and Gynaecology

Guideline for Management of the Rhesus-negative pregnant woman

Background

Due to the availability of ant-D immunoglobulin (IMI, preferably in deltoid muscle*), the incidence the Rhesus disease has decreased dramatically. Yet, the disease continues to exist and when it does, it often has severe consequences for the families involved. Strict adherence to immunoprophylaxis guidelines is therefore essential while intensive surveillance and swift referral to specialised centres is required to reduce adverse outcomes once sensitisation has occurred.

** in case of a bleeding/clotting disorder, please consult haematologist re. IMI injection*

Woman without anti-D antibodies at booking

Consider obtaining fetal blood group genotyping by means of cell-free DNA

- There are the following possibilities:
    - Unity test by Billiontoone, testing for fetal D, C, c, E, Fya (Duffy), and K (Kell)
        - +1 (650) 460-2551
        - support@unityscreen.com
        - Cost approximately R5,000
    - Panorama test by Natera, testing for fetal D
        - Available through local laboratories
        - Cost approximately R 6,500
    - Fetal genotyping by IBGRL, prediction of fetal D, c, C, E blood groups from 16 weeks and Kell (K1) from 20 weeks gestation.
        - +44 7808 906398
        - molecular.diagnostics@nhsbt.nhs.uk
        - Cost approximately R10,800
- These tests are highly accurate. If the fetal genotype is negative, the patient can be managed as if she were rhesus positive and not sensitized, with normal antenatal care, no third trimester or postnatal anti-D administration, and delivery timing, route and place according to normal obstetrical considerations.

Repeat specimen every 4-6 weeks

Suggested minimum 20, 26, 32 and 38 weeks

Discuss option of RAADP:

Routine administration of 100 ug anti D IgG at 28 and 34 weeks in non-sensitised women, if availability allows this, and with informed consent

Give anti-D Ig within 72 hours of any sensitising event

- Ectopic pregnancy (irrespective of treatment modality)
- Therapeutic abortion (irrespective of treatment modality)
- Incomplete T1 miscarriage requiring intervention
- T2 or T3 delivery (unless fetus proven to be Rhesus-negative)
- Invasive procedure (diagnostic or therapeutic)
- APH
- Abdominal trauma
- ECV

Dosage: <20 weeks: minimum 50 µg (250 IU)

≥20 weeks : minimum 100 µg (500 IU)

For any sensitising event after the first trimester, it is prudent to obtain a Kleihauer Betke test to determine the size of the fetomaternal haemorrhage. If it is negative, then a standard dose of IgG still needs to be administered. If the FMH is larger than 4mls, a higher dose is required.

Woman with anti-D antibodies at booking or at subsequent visits

Where possible, obtain fetal blood group genotyping by means of cell-free DNA

- In case of fetal hydrops, refer to specialised unit for MCA PSV assessment as soon as possible
- See laboratory details above
- These tests are highly accurate. If the fetal genotype is negative, the patient can be managed as if she were rhesus positive and not sensitized, with normal antenatal care and delivery timing, route and place according to normal obstetrical considerations.

Management of the low-risk sensitised woman:

Low risk =

- No fetal hydrops
- No previous affected pregnancy (irrespective of the outcome)
- Titer lower than 1:16

Management

- Repeat ultrasound and antibody titer every 3 weeks until delivery

- If no deterioration: deliver at level II hospital
- No post-delivery IgG required
- Send cord blood for urgent blood group, Rhesus, direct Coombs, FBC
- Inform paediatricians as infant at risk for mild/moderate anaemia and severe jaundice

Management of the high-risk sensitised woman:

High risk =

- Fetal hydrops
- Any previous affected pregnancy
- Anti-D titer 1:16 or higher
- Any anti-Kell antibody titer (detected on routine indirect Coombs at booking for all [pregnant women)
- Any other clinically significant red cell antibody (detected on routine indirect Coombs at booking for all [pregnant women)

Management:

- Refer to specialised unit for MCA PSV assessment as soon as possible

- **Initial MCA PSV < 1.5 MoM and no hydrops:**
  - Repeat twice at weekly interval to determine trend
  - If shallow slope, can extend interval to two-weekly reassessment
  - If steep slope: continue with weekly reassessment
  - Continue surveillance until delivery
  - If no deterioration: deliver at level II hospital at term
  - No post-delivery IgG required
  - Send cord blood for urgent blood group, Rhesus, direct Coombs, FBC
  - Inform paediatricians as infant at risk for anaemia and severe jaundice

- **MCA PSV > 1.5 MoM during fetal apnoea and quiescence, or hydrops:**
  - < 34 weeks: prepare for intra uterine transfusion (IUT)
    - May consider diagnostic FBS to rule out false positive MCA PSV
    - If viable: Administer steroids for lung maturity (and MgSO4 for neuroprotection if < 32 weeks)
    - At transfusion: send fetal blood for Group, Rhesus, Direct Coombs and FBC (and possibly reticulocyte count)
    - After transfusion: continue MCA PSV surveillance for timing of repeat transfusion until delivery
    - No need for repeat titers
    - Planned preterm delivery > 34 weeks (approx. 2 weeks after last IUT)
  - >34 weeks: prepare for delivery at level III hospital
    - May consider FBS to rule out false positive MCA PSV
    - No post-delivery IgG required
    - Send cord blood for urgent blood group, Rhesus, direct Coombs, FBC

- Inform paediatricians as infant at high risk for severe anaemia and severe jaundice
- If there were repeated IUT:
    - Send cord blood for urgent FBC
    - The infant may not be anaemic or jaundiced at birth (may even test negative for the antigen), but it is at high risk of chronic and progressive anaemia for weeks to come – ensure an intensive paediatric follow up plan is in place.

July 2024