Chloe Sember
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Evaluation and management of Rh(D) negative pregnancy.

1. Definition or Key Clinical Information (Jordan et al., 2019)

If a person has rhesus D antigens, they are considered to have an Rh positive blood type. If a Rh(D)+ child is born to a Rh(D)- mother and fetal and maternal blood mix during birth or other events that can cause bleeding during pregnancy, alloimmunization can occur. This mean that the maternal immune system will produce antibodies against the foreign antigens and will therefore begin attacking the baby's blood. This most commonly has effects for future pregnancies and future Rh(D)+ children. Anti-D immune globulin (RhIg or RhoGAM) is a prophylactic treatment that protects against alloimmunization for 12 weeks.

2. Assessment

i. Risk Factors (The American College of Obstetricians and Gynecologists, 2017; Tharpe, 2021)

- Rh(D) positive partner
- Recurrent miscarriage or stillbirth with unknown cause
- Blood transfusions
- Placental abruption
- Ectopic pregnancy
- Abdominal trauma in pregnancy or invasive procedures (CVS, amniocentesis, ECV)

ii. Subjective Symptoms (Jordan et al., 2019; Tharpe, 2021)

- States Rh negative blood type
- Has received RhoGAM before
- Recurrent miscarriages, with or without a previous successful pregnancy

iii. Objective Signs (Tharpe, 2021)

- Blood test results during pregnancy
- Blood test results for the neonate

v. Clinical Test Considerations (Jordan et al., 2019; Tharpe, 2021)

- Blood type and Rh factor for mother at onset of care
- Non-Invasive Prenatal Testing (NIPT) for fetal blood-typing
- Indirect Coombs Test - antibody screen
    - onset of care
    - 28-30w
    - 36w if prenatal prophylaxis declined
    - if a potential sensitization event occurs
    - IPP
    - 3m postpartum if prophylaxis declined

Practice Guideline for Rh(D) negative pregnancy

Updated Summer 2024

- Cord blood testing with Eldon Card for blood typing newborn
- Direct Coombs - looking for maternal antibodies in newborn

vi. Differential Diagnosis (Jordan et al., 2019; Tharpe, 2021)

- ABO Incompatibility
- Rh-sensitized client
- Duffy, Kidd, Kell, or other blood group sensitization

3. Management plan

i. Therapeutic measures to consider within the CPM scope (The American College of Obstetricians and Gynecologists, 2017)

- RhoGAM repeated every 12w if received prior to 28w
- RhoGAM offered at 28w and within 72h of birth if newborn is positive
- RhoGAM offered within 72h after a potentially sensitizing event - abdominal trauma, amniocentesis, chorionic villus sampling, ECV, placental abruption, miscarriage

ii. Therapeutic measures commonly used by other practitioners (Tharpe, 2021)

- RhoGAM

iii. Ongoing care (Tharpe, 2021)

- Test newborn blood after delivery via cord blood and eldon card or a lab. If positive, offer parent RhoGAM within the first 72h
- If the parent declines RhoGAM, offer an antibody screen every 4w prenatally and 3m postpartum

iv. Indications for Consult, Collaboration, or Referral (Tharpe, 2021)

- MFM: positive antibody screen at any time
- Neonatologist: newborns with positive direct Coombs or significant jaundice

v. Client and family education (Jordan et al., 2019)

- Risks of declining RhoGAM - If positive fetal blood mixes with negative maternal blood, sensitization could occur. Sensitization will cause the mother's immune system antibodies to attack the fetus. This will most likely affect future pregnancies rather than the current pregnancy - it can lead to hemolytic disease of the newborn (HDN) which is a blood disease causing anemia and jaundice or future miscarriage.
- Risks of RhoGAM - Can develop reaction such as nausea or headache and clinically insignificant risk of minor sensitization in a Rh(D)+ fetus
- RhoGAM is a blood product

4. References

Jordan, R.G., Engstrom, J.L., Marfell, J.A., & Farley, C.L. (2019). *Prenatal and postnatal care: A woman-centered approach* (2nd ed.). Wiley Blackwell.

Tharpe, N.L., Farley, C.L., & Jordan, R.G. (2021). *Clinical practice guidelines for midwifery & women's health* (6th ed.). Jones & Bartlett Learning.

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