Clinical Pathway for Alloimmunized Pregnancies

Legend
Refer to MFM

First Trimester ≥ 8 Weeks' Gestation

ABO/RhD blood type and antibody screen[1]

Antibody screen positive (RhD negative OR positive)

Refer to MFM for positive Kell antibodies or in all cases where a previous fetus/neonate was affected by severe HDFN.[1]

Antibody identification followed with initial titre. Repeat titre every 4 weeks until 28 weeks' gestation, then every 2 weeks until delivery or if titre increases two-fold for ALL clinically significant alloantibodies.[1] **Discontinue titres if Allo-FBGG result is antigen-negative.**

Anti-K (Kell)

Refer to MFM *(Titres may not be reliable predictors of HDFN risks for Kell antibodies)*

Order Alloimmunized Fetal Blood Group Genotyping (Allo-FBGG) ≥ 20 weeks' gestation for anti-K (Kell)

Fetus **negative** for Kell (K) antigen

Repeat Allo FBGG for Kell (K) antigen at 28 weeks' gestation

Fetus **negative** for Kell (K) antigen

Routine prenatal care

Fetus **positive** for Kell (K) antigen or results **unknown/ pending**

Anemia studies by MFM

Anti-D, C, c, E

Order Alloimmunized Fetal Blood Group Genotyping (Allo-FBGG) ≥ 16 weeks' gestation for anti-D, C, c, E

1. Fetus **negative** for tested antigen(s)

Routine prenatal care

2. Fetus **positive** for tested antigen(s), or results **unknown/pending**

No previous fetus/neonate affected by severe HDFN

Antibody titre every 4 weeks until 28 weeks' gestation, then every 2 weeks until delivery or if the titre increases two-fold.[1]

Critical titre reached

Refer to MFM for initiation of anemia studies

Other Clinically Significant Alloantibodies

No fetal blood group genotyping (Allo-FBGG) test available

Assume fetus is positive for antigen; consider paternal antigen testing (phenotyping), if paternity is certain[1]

Paternal antigen negative — Follow 1

Paternal antigen positive/ unknown — Follow 2

After Delivery

Send cord blood for antigen phenotype and DAT† for *all* alloimmunized pregnant women/individuals with clinically significant antibodies[1,††]

Corresponding antigen is **negative** and / DAT negative → **Routine neonatal care**

Corresponding antigen is **positive** and / DAT positive or negative → **Screening for hyperbilirubinemia as per guidelines[2]**

† Additional cord blood investigations, such as ABO, complete blood count (CBC), and bilirubin, may be warranted depending on the clinical context and as per practice guidelines.[1]

†† If discrepant results are found between Allo-FBGG and cord blood results, use cord blood results and monitor neonate as per CPS guidelines.[1] Contact Sinai Health: Diagnostic Medical Genetics laboratory to report discrepancy: FBGG.MSH@sinaihealth.ca or Tel: (416) 586-4800 ext. 5974

References:

1. Robitaille, N., et al. (2025). National consensus statements for the prevention of maternal Rhesus D alloimmunization and management of alloimmunized pregnancies: A modified Delphi process. *Journal of Obstetrics and Gynaecology Canada.* Advance online publication. https://doi.org/10.1016/j.jogc.2025.103113
2. Ng, E., et al. (2025). Guidelines for detection and management of hyperbilirubinemia in term and late preterm newborns (≥35 weeks gestational age). *Canadian Paediatric Society.* https://cps.ca/en/documents/position/hyperbilirubinemia-newborns

Disclaimer:
This clinical pathway is intended for informational use only and is not a replacement for established clinical guidelines. Medical practices may vary from the steps described here. If you are not a health-care professional, please consult a health-care provider for any questions regarding the information presented in this flowchart. If a patient's clinical presentation is not included in this flowchart, consultation with an appropriate specialist is recommended.

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