Resource Library

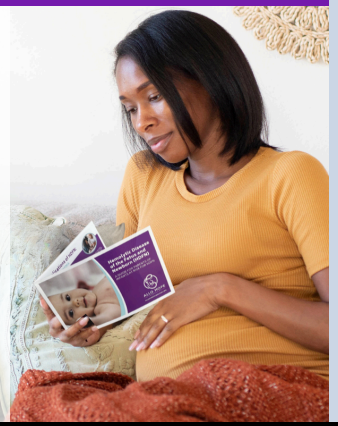
- Listen to The Allo Podcast
- Request Free Patient Booklets
- AHF Clinician Resources
- Plain Language HDFN Summary
- cffDNA Requisition Form
- Citation List

Alloimmunization comes with a heavy psychosocial burden for the mother

How You Can Help

Refer patient to Allo Hope Foundation for education and social support

Offer referral to mental health professional as anxiety and depression are reported in 91% and 68%, respectively, of alloimmunized patients



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ALLO HOPE FOUNDATION

The Allo Hope Foundation

Who We Are

The Allo Hope Foundation is a U.S.-based nonprofit organization founded and led by alloimmunized patients with backgrounds in education, clinical care, and research. Our mission is to prevent harm, stillbirth, or infant death caused by alloimmunization and Hemolytic Disease of the Fetus and Newborn (HDFN).

Our Medical Advisory Board includes experts in maternal-fetal medicine and neonatal care, collaborating on evidence-based resources, research and the highest level of patient care.

Juan M. González Vélez, MD PhD
Enrico Lopriore, MD
Kara B Markham, MD
Kenneth J Moise Jr., MD
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Saul Snowise, MD
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What We Do

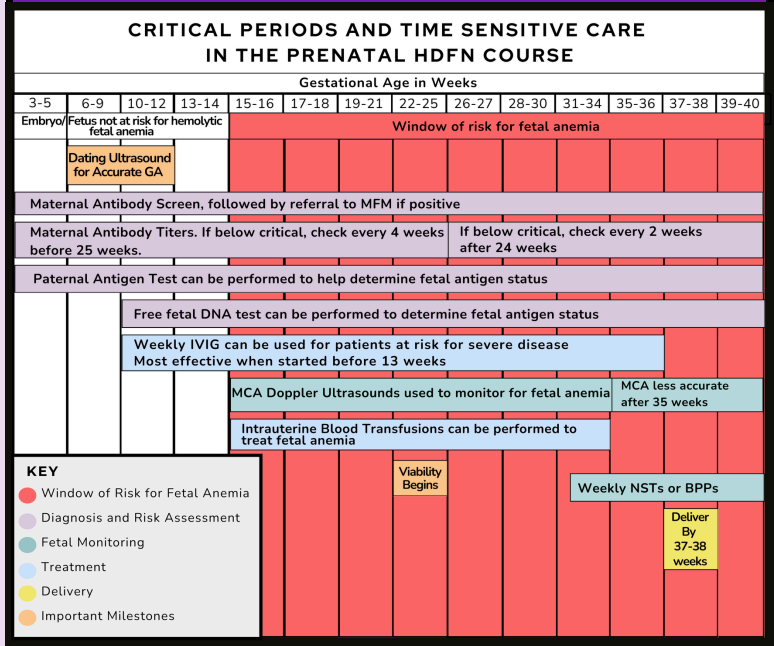
- Daily peer support and education to alloimmunized patients
- Speak, research, and publish on the needs of the alloimmunized community, advocating for optimal, evidence-based treatment
- Promote and contribute to the highest standards of alloimmunized pregnancy and HDFN care

To connect with a Maternal-Fetal Medicine specialist, request educational materials, or arrange peer support for an alloimmunized patient, contact us at info@allohopefoundation.org

Maternal Red Cell Alloimmunization:

Evidence-Based Management for Optimal HDFN Outcomes

Managing an alloimmunized pregnancy requires precisely timed diagnosis, monitoring and treatment.



With proactive monitoring and skilled intervention, expect fetal survival for the pregnancy complicated by alloimmunization/HDFN.

Prenatal

Diagnosis and Risk Assessment

If patient has positive RBC antibody screen

- Follow with antibody ID (CPT 86870) and titer (CPT 86905)

If antibody is known to cause HDFN

- Refer to MFM with specific skill in conducting intrauterine transfusions (may be out of state; contact Allo Hope Foundation for a recommended provider)
- Order paternal antigen phenotyping (RhD: 86901; C, c, E, e: 86906; Others: 86905)

If paternal antigen result is heterozygous

- Consider UNITY Fetal Antigen test as early as 10 weeks gestation for patients with D, K, C, c, E or Fya antibodies
- Can consider optional amniocentesis for patients with other antibodies, though this could increase antibody titer. Otherwise monitor as if fetus is antigen positive

If fetus is negative for the antigen in question

- Fetus is not at risk for HDFN, regardless of maternal antibody titer; manage pregnancy normally. No further titer assessments needed

If titers are critical ($\geq$4 for Kell, $\geq$16 for other antibodies)

- Do not allow fetal antigen status determination to delay referral to MFM

If titers are below critical

- Monitor titers every month until 24 weeks, then every two weeks thereafter

Fetal Monitoring

Patients at risk for Early-Onset Severe HDFN (titers of ≥64 for Kell, ≥128 for others, or history of severe HDFN) require prompt, early referral to MFM as their care is extremely time sensitive

If patient has critical titers

- Middle cerebral artery (MCA) Doppler ultrasounds can begin as early as 15 weeks gestation in skilled fetal centers (CPT 76821) and should be initiated no later than 16 weeks gestation

Once MCA Doppler scans have been initiated

- Continue to scan weekly as hemolytic fetal anemia can develop in less than one week

When the patient reaches 32 weeks GA

- Begin weekly BPP or NSTs until delivery regardless of titer

Treatment

If patient is at risk for Early-Onset Severe HDFN (titers of ≥64 for Kell, ≥ 128 for others, or history of severe HDFN)

- Patient may benefit from IVIG with or without therapeutic plasma exchange. IVIG has been shown to delay time to first IUT by three weeks or more

An MCA-PSV at or above 1.5 MoM for gestational age

- Indicates possible severe anemia requiring intrauterine blood transfusion (IUT)
- Note that a severely anemic early fetus may not show visible signs of anemia such as hydrops other than an elevated MCA Doppler value
- IUT outcomes decline significantly if fetus is hydropic. Initiate IUT based on MCA Doppler values and do not wait for ascites or hydrops to develop

Be aware of emerging FcRn blockade treatments in clinical development

Delivery

In advance of delivery

- Offer to facilitate NICU tour and pediatric hematology consult for family
- Prepare cross-matched blood for alloimmunized mother and infant at time of delivery

If fetus is known or assumed to be antigen positive

- Deliver by 37-38 weeks GA regardless of antibody titer

Neonatal

After delivery families can expect:

Cord blood drawn at birth

- For Direct Coombs Test (DCT/DAT) to confirm HDFN
- For bilirubin, hematocrit/hemoglobin test

Frequent bilirubin assessment

- Consistent with AAP guidelines

Potential NICU admission

- For prematurity, phototherapy, exchange or top-up transfusion, neonatal IVIG

After discharge families can expect:

In advance of hospital discharge

- Provider assistance in identifying a pediatric hematologist for follow up care

Monitoring for delayed onset anemia

- Weekly Hgb/Hct and retic up to three months of age
- Anemia often doesn't require transfusion until 2 weeks or more after delivery