Management of a pregnancy at risk of Fetal and Neonatal Alloimmune Thrombocytopenia (FNAIT) - A Case Report

Dr Rebekah Gobinathan
Department of Obstetrics and Gynaecology, Ipswich Hospital, QLD

BACKGROUND

FNAIT is a rare but potentially life-threatening condition affecting approximately 1 in 1000 pregnancies[1].

It results from maternal–fetal platelet incompatibility, leading to maternal antibody formation and subsequent fetal/neonatal thrombocytopenia.

The most serious complication is fetal/neonatal intracranial haemorrhage, occurring in approximately 10-20% of cases, and can result in death or long-term neurological impairment[2].

AIM

To highlight FNAIT and increase awareness regarding antenatal monitoring and management.

CASE

A 21-year-old G2P1 woman is receiving antenatal care for a pregnancy at risk of FNAIT due to human platelet antigen (HPA) incompatibility with her partner. Their previous pregnancy was unaffected. She has a family history of her mother having FNAIT in pregnancy.

RESULTS

Parental HPA typing showed the patient was HPA-1bb and her partner HPA-1aa, indicating a fetus at risk for alloimmunisation (HPA-1ab). No maternal anti-HPA-1a antibodies were detected, and she was HLA DRB3*0101 negative. The Maternal Fetal Medicine team recommended monthly antibody monitoring and referral to them if antibodies develop. Serial fetal ultrasounds to date have been normal.

DISCUSSION

Anti-HPA-1a accounts for up to 80% of FNAIT cases in Caucasians, with anti-HPA-5b causing about 15% and anti-HPA-4b being the most common cause in Asian populations[3]. Women with the HLA DRB3*0101 allele have a 25 times higher risk of alloimmunisation[4]. Routine antenatal screening is not currently performed unless risk factors exist; hence most cases are diagnosed postnatally following neonatal thrombocytopenia. First-line antenatal treatment is intravenous immunoglobulin (IVIg), with good evidence of reduced morbidity[5]. Future pregnancies require close monitoring due to high recurrence risk[1].

References:

1. Constantinescu S, Zamfirescu V, Vladareanu PR. Fetal and neonatal alloimmune thrombocytopenia. Maedica (Bucur). 2012;7(4):372-376.
2. Bussel JB, Zabusky MR, Berkowitz RL, McFarland JG. Fetal alloimmune thrombocytopenia. N Engl J Med. 1997;337(1):22-26. doi:10.1056/NEJM199707033370104
3. Londero D, Sindici C, Merluzzi S, Bertozzo E, Barillari G. Neonatal alloimmune thrombocytopenia due to anti-HPA-1b and anti-HLA antibodies: diagnostic and transfusion management of a clinical case. Blood Transfus. 2026;24(1):31-34. doi:10.2450/BloodTransfus.1131
4. Zhao Y, Liu P, Chen L, et al. New perspectives on fetal and neonatal alloimmune thrombocytopenia for obstetricians. Front Immunol. 2026;17:1783176. Published 2026 Apr 1. doi:10.3389/fimmu.2026.1783176
5. Regan F,Lees C, Jones B, et al. on behalf of the Royal College of Obstetricians and Gynaecologists. Prenatal Management of Pregnancies at Risk of Fetal Neonatal Alloimmune Thrombocytopenia (FNAIT). Scientific Impact Paper No.61. BJOG 2019;126:e173–185.