**Antenatal Management of HNF4A-MODY and INSR Mutations in Pregnancy: A Complex Case of Monogenic Diabetes**

**Background/Aim**

To present a case of a pregnant woman with confirmed *HNF4A*-MODY and *INSR* gene mutations, with a focus on antenatal management and the implications of foetal variant inheritance.

**Methods**

A 25-year-old G1P0 woman was referred at 24 weeks’ gestation for antenatal care. She had a history of diabetes diagnosed at age 17, initially treated as type 2 diabetes. Her normal BMI (22.2 kg/m²), marked insulin sensitivity, and a strong paternal family history of diabetes prompted genetic evaluation. Molecular testing confirmed pathogenic variants in both *HNF4A* and *INSR* genes. Inheritance of the *HNF4A* variant is associated with increased risk of foetal macrosomia and neonatal hypoglycaemia, while *INSR* variants confer a risk of insulin resistance, poor postnatal weight gain, and prolonged hypoglycaemia.

**Results**

Non-invasive prenatal testing (NIPT) predicted foetal inheritance of the maternal *HNF4A* variant. At 34 weeks, ultrasound demonstrated an estimated foetal weight of 2300 g (52nd percentile) and abdominal circumference of 316.6 mm (86th percentile). Delivery occurred at 34+4 weeks via vacuum-assisted vaginal birth for prolonged second stage; birth weight was 2860 g (90–95th percentile). The neonate required monitoring for hypoglycaemia and received supportive care.

**Discussion**

HNF4A-MODY in pregnancy requires early recognition. Maternal hyperglycaemia can exacerbate foetal hyperinsulinism in affected offspring, heightening the risk of macrosomia and hypoglycaemia. In this context, tight glycaemic control from early gestation is crucial. Serial growth scans and early delivery—even with good glucose control—may be warranted. INSR mutations introduce additional risks such as poor postnatal weight gain and prolonged hypoglycaemia.

**Conclusion**

This case highlights the importance of timely recognition of monogenic diabetes and the emerging role of non-invasive prenatal testing (NIPT) in identifying foetal inheritance of pathogenic variants. Optimising maternal glycaemic control and ensuring close foetal and neonatal surveillance are critical to improving perinatal outcomes.