Background Currently, maternal Rh-D antibody levels are primarily used to triage which alloimmunized women warrant enhanced surveillance with middle cerebral artery Doppler. Traditionally, maternal Rh-D antibody levels ≤15 IU/ml have indicated, at worst, mild anaemia and provided reassurance. This threshold has not been widely studied.

Methods A prospective cohort study of all intrauterine fetal transfusions (IUT) for Rh-D alloimmunization performed at our tertiary fetal medicine unit from 1996–2011. Fetal haemoglobin (Hb) levels at the time of IUT were adjusted for gestational age (multiples of median [MoM]) and correlated with the maternal serum Rh-D antibody level taken on the day of IUT, or ≤2 weeks prior to the transfusion.

Results 260 IUTs were performed, of which 195 were for Rh-D alloimmunization in 82 pregnancies. No significant correlation was demonstrated between fetal Hb and serum antibody levels (Spearman r = 0.08; p = 0.55). Rates of mild (0.65–0.84 MoM), moderate (0.55–0.64 MoM) and severe (<0.55 MoM) fetal anaemia were 52%, 22% and 31% respectively. The sensitivity, specificity, PPV and NPV of a maternal antibody threshold of >15 IU/ml detecting any fetal anaemia (<0.84 MoM) were 88%, 14%, 55% and 18%. The equivalent results for a threshold of >15 IU/ml detecting moderate-severe anaemia (<0.65 MoM) were 88%, 12%, 52% and 47%. Using a lower antibody threshold of >8 IU/ml, the sensitivity, specificity, PPV and NPV of maternal serum antibody levels detecting any fetal anaemia were 90%, 5%, 58% and 17% respectively.

Conclusion The widely used Rh-D threshold of >15 IU/ml may miss a substantial proportion of cases of fetal anaemia.

PF.25 RELATIONSHIP BETWEEN MATERNAL ANTIBODY LEVEL AND FETAL HAEMOGLOBIN CONCENTRATION IN PREGNANCIES COMPLICATED BY RHESUS-D ALLOIMMUNIZATION

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Background Our unit offers a comprehensive fetal echocardiography service to expectant mothers who are at increased risk of having a fetus with a cardiac defect.

Methods A prospective study from January 2007 to December 2011. Cases of fetal echocardiography were extracted and analysed for referral indication, the presence of extra-cardiac anomalies on ultrasound and, where applicable, the results of invasive testing for fetal karyotype. Indications for fetal echocardiography were classified as abnormal anatomy scan, family history, previously affected child, maternal medical disease (diabetes, epilepsy etc) or other (including IUGR and teratogen exposure).

Results During the 5-year study period 1,244 echocardiograms were performed in our unit, with 242 (19.5%) cardiac defects detected. The most common defects were AVSD (n = 36), VSD (n = 26), transposition (n = 15), tetralogy of Fallot (n = 15), HLHS (n = 27), coarctation (n = 6) and valvar cardiac defects (n = 30). Abnormal mid-trimester fetal anatomy scan was the best indicator for detecting cardiac defects on echocardiography, compared to all other indications (p < 0.0001). Invasive testing for karyotype was performed for 44% of cases, of which 51% were abnormal. 37% (n = 89) of those with a cardiac anomaly also had an extra-cardiac defect. The presence of extra-cardiac defects was associated with a significantly higher rate of abnormal fetal karyotype (p < 0.0001).

Conclusion Most congenital cardiac defects occur in a low risk population, highlighting the importance of the 20-week anomaly