

DOP041. Intra-uterine Exposure to Anti-TNF-alpha therapy (ERA study): Infliximab and adalimumab cord blood levels correlate with maternal levels at birth

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Background

Recent studies suggest no adverse pregnancy outcomes in babies exposed to anti TNF antibodies (ATA). However, the long term implications are unknown. Current guidelines suggest cessation of treatment in the last trimester of pregnancy to reduce fetal exposure but this is difficult for women with IBD who are not in deep remission, as active disease is a greater risk for adverse pregnancy outcome. This study aimed to examine drug levels of ATA in cord blood of newborns exposed to ATA in pregnancy, and to correlate these with maternal levels, the duration of therapy during pregnancy, and time to clearance of ATA in infants.

Methods

Women with IBD exposed to infliximab (IFX) or adalimumab (ADA) during pregnancy were included from 2012-present at 11 hospitals in Denmark, Australia and New Zealand. ATA levels were measured using an ELISA in cord and maternal blood at delivery (Matriks Biotek). If positive at birth, the infants were tested every third month until ATA were undetectable. Demographics, disease phenotype, disease activity in pregnancy, duration of ATA use in pregnancy, medication and pregnancy outcomes were prospectively collected by questionnaire and from the treating doctor.

Results

40 mother-baby pairs have been tested (20 IFX and 20 ADA). Drug was ceased prior to gestational week (GW) 30 in 16 (40%) women without disease flares. In them, mean serum concentrations were 1.78 µg/ml (IFX) and 0.15 µg/ml (ADA), and the cord blood level at delivery was <3 µg/ml in 12/16 (75%). There was a strong correlation between cord blood and maternal levels at delivery (IFX: Pearson's $r=0.77$, $p<0.0001$; ADA: $r=0.753$, $p<0.0001$). An inverse correlation between duration since last exposure and maternal ATA levels at birth was found (IFX: $r=-0.55$, $p=0.01$; v ADA: $r=-0.48$, $p=0.04$). This was also the case for cord IFX levels at birth ($r=-0.532$, $p=0.02$), but not for cord ADA levels at birth ($r=-0.38$, $p=0.12$). Complete clearance of ATA was seen in 14/17 babies by 6 months and in this group 7 stopped ATA by week 30. To date there has been no detectable ATA levels by 9 months. One woman (2.5%) gave birth preterm (GW 34+1). No congenital malformations were detected and all babies are developing normally.

Conclusion

Cord blood ATA levels were strongly correlated with maternal level at delivery. Maternal and neonatal ATA levels seem to be inversely correlated with the duration since last exposure. Maternal cessation of ATA prior to week 30 successfully reduced fetal exposure to drug in the majority of cases. Follow up will determine whether high neonatal levels have any negative consequences.