

EP 07.28: Effects of antenatal corticosteroids on fetal Doppler and short-term fetal heart rate variability in early-onset fetal growth restricted pregnancies

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AIM

Effects of antenatal CCS on fetal Dopplers and STV in early-onset FGR pregnancies

KEY RESULTS

Temporary improvement of fetal Dopplers, while STV decreases

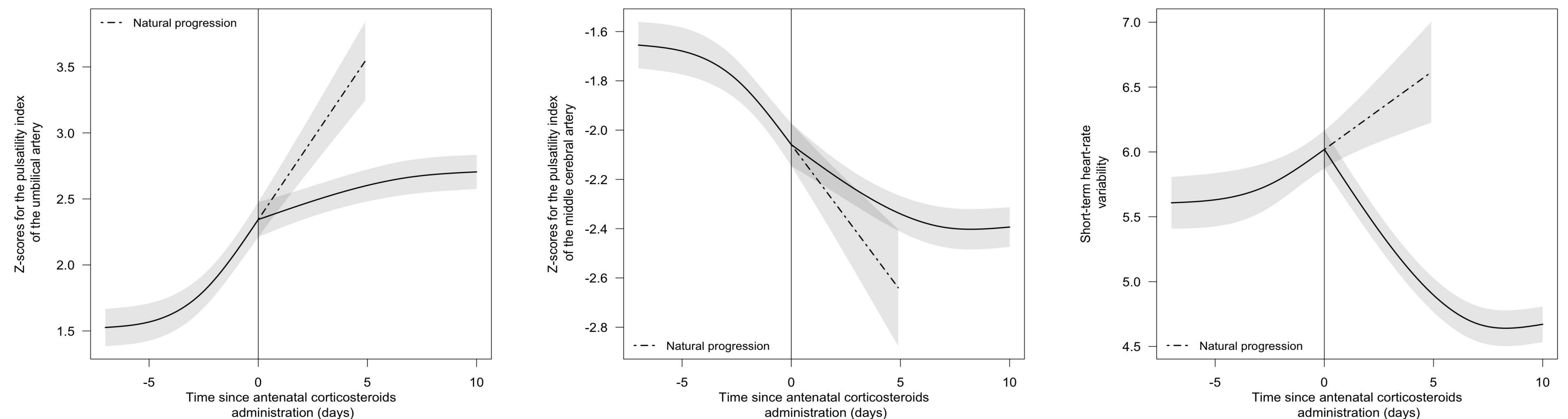


Figure 1: Trajectories for fetal Dopplers and the short-term fetal heart rate variability before and after corticosteroid administration

CONCLUSION

Antenatal CCS administration in early-onset FGR is associated with a temporary improvement in fetal Doppler parameters, while STV decreases.

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METHODS

Data of 1453 pregnancies complicated by early-onset FGR

Doppler and STV trajectories were modeled using linear mixed-effects models over 7 days prior to and 10 days after CCS administration.

Natural progression in the absence of CCS administration was modeled up to day 5.

Differences in the predicted average trajectories at days 5 and 10 after CCS administration were calculated, as well as those between natural progression and estimated average trajectories at days 3 and 5, with corresponding Bonferroni-adjusted 95% confidence intervals and p-values.

RESULTS

Median gestational age at birth was 30 weeks and 4 days (IQR 28 weeks and 4 days – 32 weeks and 3 days), with a median birthweight of 1050 grams (IQR 800-1345 grams). Mean gestational age at time of CCS administration was 28 weeks and 3 days (SD 2 weeks and 1 day).

Observed Z-score for the pulsatility index (PI) of the umbilical artery (UA) decreased after CCS, compared with predicted natural progression.

For the middle cerebral artery (MCA), a gradual decrease in the PI following CCS administration was observed.

STV decreased after CCS administration.

All differences were statistically significant ($p < 0.001$), except for the differences in the MCA PI relative to natural progression at days 3 and 5 ($p = 0.075$ and $p = 0.034$).