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REPEATED DOSES OF ANTENATAL CORTICOSTEROIDS FOR WOMEN AT RISK OF PRETERM BIRTH REDUCE SIZE AT BIRTH

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Objective: Repeat doses of antenatal corticosteroids reduce occurrence of neonatal lung disease in preterm infants. The primary objective of this study was to evaluate longer-term benefits and risks with such intervention. Here we report effects on neonatal anthropometry.

Methods: Cohort study of 94 subjects (59 boys, mean gestational age (GA) at first exposure for corticosteroids 28.7 w, GA at birth 34.0 w) born 1983-1995 and exposed to 2-9 doses of antenatal betamethasone (first 24 mg followed weekly with an additional 16 mg until delivery or 34 w GA). Exposure data were retrieved from case record files. Information on other risk factors or potential confounders (maternal age, height, parity, smoking, preeclampsia, and multiple pregnancy), and outcome was collected from the Swedish Medical Birth Registry.

Results: In univariate analyses, SD-scores for birth weight (BW), birth length (BL), and head circumference (HC) decreased from -0.25, -0.11, and +0.25 in infants exposed to 2 doses, to -0.99, -1.03, and -0.22, respectively, in infants exposed to ≥ 4 doses of antenatal corticosteroids ($p=0.05-0.07$). In multivariate analyses, ≥ 4 doses ($n=40$) was associated with lower SD-scores for BW ($p=0.01$), BL ($p=0.007$), and HC ($p=0.04$) as compared to SD-scores found after 2-3 doses of antenatal corticosteroids ($n=54$). The size of the effect from ≥ 4 doses of antenatal steroids on BW and BL was comparable to the reduction in birth size seen in twins, and on HC to that seen after maternal smoking.

Conclusion: Multiple doses of antenatal corticosteroids are associated with a reduction in BW, BL and HC.

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DIFFERENCES IN ORGAN DYSFUNCTIONS BETWEEN NEONATES AND OTHER CHILDREN

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The PEdiatric Logistic Organ Dysfunction (PELOD) score has been validated as a score to describe and quantify the severity of organ dysfunctions (ODs). Several neonatal pathophysiological and immunological particularities make a rationale for differences in ODs between neonates and other children (non-neonates).

Objective: To find out if there are important differences in mortality, OD incidence and OD contribution to mortality between neonates (age < 28 days) and non-neonates, using the PELOD score.

Methods: Prospective, observational study in seven PICUs of university-affiliated hospitals (09/98 - 02/2000). No intervention was done.

Results: 1806 patients were included, 171 (9.5%) were full-term neonates. Mortality rate and incidence of MODS were higher in neonates than in non-neonates (14.6% vs. 5.5%, $p < 10^{-7}$; 75.4%, vs. 50.9%, $p < 10^{-4}$ respectively). Daily PELOD (dPELOD) scores were significantly higher in neonates from day 1 to day 4. Daily cardiovascular, respiratory and renal dysfunction scores from day 1 to day 4, and the entire stay dysfunction scores of these three organs were significantly higher in neonates than in non-neonates. The ODs that significantly contributed to mortality in neonates were neurological, cardiovascular, and hepatic dysfunctions. In non-neonates, all ODs significantly contributed to mortality.

Conclusion: Our data demonstrate that mortality in neonates was higher as compared with non-neonates. Neurological, cardiovascular, and hepatic dysfunctions were the only significant contributors to neonatal mortality, while other ODs were also associated with mortality in non-neonates.

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