

Do corticosteroids have different effects in preterm or small babies?

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Fetal glucocorticoid exposure commonly occurs in women threatening to deliver their baby prematurely. This treatment has proved efficacious in preventing much of the morbidity and mortality associated with life threatening respiratory problems faced by premature delivery. However, it is now recognised that prenatal glucocorticoid exposure can have deleterious effects on the development of other organs (such as the kidney and the heart) which may in the longer term contribute to adult onset disease, including hypertension. Recent data have suggested that neonatal outcomes following prenatal glucocorticoid exposure may in part be dependent upon fetal sex with the placenta playing a role in modifying the amount of corticosteroid that reaches the fetal circulation. Also of recent concern are data suggesting that small for gestational age (SGA) babies may respond quite different to glucocorticoid exposure compared to an appropriately grown baby. Given that many babies being born prematurely are also growth restricted it is particularly pertinent to consider the impact of glucocorticoid exposure in SGA babies. Our own emerging data in mouse models suggest that maternal glucocorticoid treatment has differential effects on development of organs such as the kidney, heart and skin depending upon pup size. This suggests future treatment of a mother with prenatal glucocorticoids should take into account the fetal size.