

A putative role for hypothalamic glucocorticoid receptors in hypertension induced by prenatal undernutrition in the rat

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Prenatal undernutrition induces hypertension later in life, possibly by disturbing the hypothalamo-pituitary-adrenal axis through programming decreased expression of hypothalamic glucocorticoid receptors. We examined the systolic blood pressure, heart rate and plasma corticosterone response to intra-paraventricular dexamethasone, mifepristone and corticosterone in eutrophic and prenatally undernourished young rats. Undernutrition was induced during fetal life by restricting the diet of pregnant mothers to 10. g daily (40% of diet consumed by well-nourished controls). At day 40 of postnatal life (i) intra-paraventricular administration of dexamethasone significantly reduced at least for 24. h both the systolic pressure (-11.6%), the heart rate (-20.8%) and the plasma corticosterone (-40.0%) in normal animals, while producing lower effects (-5.5, -8.7, and -22.3%, respectively) on undernourished rats; (ii) intra-paraventricular administration of the antiglucocorticoid receptor ligand mif