

Effects of maternal undernutrition on glomerular ultrastructure in rat offspring

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摘要

Abstract

BACKGROUND: Intrauterine growth restriction (IUGR) can reduce glomerular number and increase blood pressure in rats. The aim of this study was to assess the effects of maternal undernutrition during late gestation on glomerular ultrastructure in adult rat offspring. **METHODS:** Timed pregnant Sprague-Dawley rats were used. Control dams received regular food throughout pregnancy, while experimental dams received 50% of control food intake from days 15-21 of gestation. Glomerular ultrastructure was quantified in male offspring at 16 weeks of age. **RESULTS:** The ultrastructure of the filtration apparatus in the IUGR rat glomeruli was indistinguishable from that in the control rat glomeruli. The relative volumes of the glomerulus occupied by podocytes, capillaries, and mesangium, and the thickness of the glomerular basement membrane (GBM), and width of the filtration slit were comparable between control and IUGR rats. **CONCLUSION:** These results indicate that glomerular ultrastructure is not affected by maternal undernutrition and suggest that altered glomerular ultrastructure is not a contributory factor to the pathogenesis of hypertension following maternal undernutrition