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Title page: Influencing factors, underlying mechanism and interactions affecting hypercholesterolemia in adult offspring with caffeine exposure during pregnancy

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Highlight

- PCE can induce hypercholesterolemia in adult offspring rats.
- HFD could exacerbate the hypercholesterolemia induced by PCE.
- Female offspring rats were more sensitive to PCE and HFD than male rats.
- PCE, HFD and genders interact in the hypercholesterolemia of adult offspring rats.

Abstract

Epidemiological surveys suggest that adult hypercholesterolemia has an intrauterine origin and exhibits gender differences. Our previous study demonstrated that adult rats with intrauterine growth retardation (IUGR) offspring rats induced by prenatal caffeine exposure (PCE) had a higher serum total cholesterol (TCH) level. In this study, we aimed to analyze the influencing factors, underlying mechanism and interactions affecting hypercholesterolemia in adult offspring with caffeine exposure during pregnancy. Pregnant rats were administered caffeine (120 mg/kg.d) from gestational day 11 until delivery. Offspring rats fed a normal diet or a high-fat diet (HFD) were euthanized at postnatal

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