

论著

过氧化物酶体增殖物激活受体- α 激动剂对高脂喂养大鼠脂肪因子表达的影响

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摘要 摘要: 目的 探讨过氧化物酶体增殖物激活受体- α (PPAR- α)

激动剂非诺贝特对高脂饮食诱导的肥胖SD大鼠胰岛素敏感性和部分脂肪因子表达的影响。方法 随机将大鼠分为3组 (n=10): 高脂饮食喂养加非诺贝特治疗组 (简称治疗组)、高脂饮食喂养组 (简称高脂组)

和标准饮食对照组 (简称对照组)。高脂饮食喂养SD大鼠6周后, 以非诺贝特20 mg·kg⁻¹·d⁻¹灌胃治疗4周, 以RT-

PCR法半定量测定脂肪组织部分脂肪因子 (肿瘤坏死因子- α (TNF- α)、白细胞介素-6 (IL-6)、血管紧张素原 (AGT)、血管紧张素 II 1型受体 (AT1R) 及脂联素) mRNA的表达, 同时检测血清游离脂肪酸 (FFA)、

甘油三脂 (TG), 并用稳态模式评估法(HOMA)评价胰岛素抵抗 (IR) 指数。结果 非诺贝特治疗4周后, 高脂组、治疗组、对照组的血FFA分别为 (2.37±0.60)、(1.59±0.30)、(1.33±0.34) mmol/L, TG分别为

(0.48±0.11)、(0.30±0.04)、(0.36±0.07) mmol/L, HOME-IR指数分别为12.30±3.97、5.03±1.88、4.17±1.27; 脂肪组织TNF- α 的mRNA半定量值分别为1.726±1.408、0.713±0.711、0.593±0.382, 脂联素分别为0.660±0.192、

0.949±0.35、0.936±0.130; 上述各指标治疗组与高脂组比较差异均有显著性 (P<0.05),

治疗组与对照组比较差异均无显著性 (P>0.05); 3组间的AGT、AT1R和IL-6的mRNA表达差异均无显著性 (P>0.05)。结论 PPAR- α 激动剂非诺贝特具有改善高脂饮食诱导的脂质异常、

提高胰岛素敏感性以及调节脂肪因子表达的作用。

关键词 [过氧化物酶体增殖物激活受体- \$\alpha\$ 激动剂](#) [脂肪因子](#) [游离脂肪酸](#) [胰岛素抵抗](#)

分类号

Effect of Peroxisome Proliferator-Activated Receptor- α Agonist on Adipokines Expression in Rats Fed with High-fat Diet

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Abstract ABSTRACT: Objective To explore the effect of peroxisome proliferator-activated receptor- α (PPAR- α) agonist fenofibrate on adipokines expression in high-fat diet fed SD rats and its relationship to insulin resistance (IR). Methods Rats were randomized into three groups (n=10): HD group, fed with high-fat diet; HDF group, fed with high fat diet and treated with fenofibrate; and control group, fed with normal diet. Animals were sacrificed after 4-week follow-up. Plasma lipids, fasting plasma insulin, free fatty acids (FFA), and insulin sensitivity were detected. Reverse transcription-polymerase chain reaction was used to semi-quantitatively determine the mRNA expression of adipokines including tumor necrosis factor- α (TNF- α), interleukin-6 (IL-6), angiotensinogen (AGT), angiotensin II type 1 receptor (AT1R), and adiponectin in brown fat. Results The plasma level of FFA, TG, and homeostatic model approach-IR index were (2.37±0.60)vs (1.59±0.30)vs(1.33±0.34) mmol/L, (0.48±0.11)vs(0.30±0.04)vs(0.36±0.07)mmol/L, and 12.30±3.97 vs 5.03±1.88 vs 4.17±1.27 in the HD group, HDF group, and control group after 4 weeks of treatment with fenofibrate, respectively. The mRNA expressions of TNF- α and adiponectin were 1.726±1.408 vs 0.713±0.711 vs 0.593±0.382 and 0.660±0.192 vs 0.949±0.35 vs 0.936±0.130 in these three groups, which showed significant difference between HD group and HDF group(P<0.05), while no significant difference between HDF group and control group (P>0.05). The mRNA expressions of AGT, AT1R, and IL-6 had no significant difference among these three groups (P>0.05). Conclusion PPAR- α agonist fenofibrate may reverse high-fat diet induced lipid abnormalities, improve insulin sensitivity, and regulate the mRNA expressions of TNF- α and adiponectin in adipose tissues.

Key words [peroxisome proliferator-activated receptor- \$\alpha\$ agonist](#) [adipokines](#) [free fatty acid](#) [insulin resistance](#)

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