

论文

饮食、运动和罗格列酮干预对高脂饮食性肥胖大鼠心肌间质重构的影响

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摘要:

目的 研究饮食、运动和罗格列酮干预对肥胖大鼠心脏间质重构的影响。方法 将SD大鼠随机分为正常对照组和高脂喂养组, 后者在第8周时选取体质量超出正常对照组平均体质量20%者为肥胖大鼠, 再分为肥胖对照组、单纯饮食干预组、饮食加运动干预组和饮食加罗格列酮组。实验第16周时测量心脏结构, 检测血脂、血清纤溶酶原激活物抑制物-1 (PAI-1)、心肌胶原含量及PAI-1基因的表达。结果 高脂饮食性肥胖大鼠左心室肥厚, 心肌胶原含量显著增加 (P<0.05), PAI-1血清水平和mRNA表达显著增强 (P<0.01)。单纯饮食干预组心室肥厚减轻, PAI-1 mRNA表达下降 (P<0.01)。运动干预组大鼠PAI-1表达明显降低 (P<0.01), 但左心室肥厚程度加剧。罗格列酮组胶原含量、PAI-1血清和心肌表达明显降低 (P<0.05, P<0.01), 且心脏结构明显改善。结论 高脂饮食性肥胖大鼠心肌间质重构可能与PAI-1表达增强有关。调整饮食、有氧运动和罗格列酮干预均可不同程度的改善心肌重构。

关键词: 干预性研究; 肥胖; 心肌重构; 纤溶酶原激活物抑制物; 大鼠

Effects of diet-control, aerobic training and rosiglitazone on cardiac interstitial remodeling in high fat fed obese rats

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Abstract:

Objective To study the intervention effects of diet-control, aerobic training and rosiglitazone on cardiac interstitial remodeling in high fat-fed obese rats. Methods SD rats were randomly divided into the normal control group and the high fat-fed group, which were fed with a basic and high fat diet respectively for 8 weeks. High fat-fed obese rats were selected according to their body weight and then divided into obese control group, diet-control group, diet-control plus swimming group and diet-control plus rosiglitazone group. Cardiac structure, serum lipids levels, serum PAI-1 levels, cardiac collagen contents and PAI-1 mRNA expressions were measured at the 16th week. Results Cardiac collagen contents and PAI-1 levels in serum and hearts were increased in high fat-fed obese rats with hypertrophic left ventricle (P<0.05, P<0.01). Cardiac structure, collagen accumulation and PAI-1 mRNA expressions were improved in diet-control group (P<0.01). Left ventricular hypertrophy was aggravated and PAI-1 expressions were decreased markedly in diet-control plus swimming group (P<0.01). Cardiac collagen contents and PAI-1 levels in serum and hearts were decreased significantly in diet-control plus rosiglitazone group (P<0.05, P<0.01) with remarkably rehabilitated cardiac structure. Conclusion PAI-1 might be related to cardiac interstitial remodeling in high fat-fed obese rats. Diet-control, aerobic training and rosiglitazone therapy could improve cardiac remodeling in various degrees.

Keywords: Interventional studies; Obesity; Cardiac remodeling; Plasma plasminogen activator inhibitors; Rats

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