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线粒体DNA 4977 bp缺失与冠状动脉病变严重程度及稳定性的关系 点此下载全文

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摘要：

目的：探讨人外周血线粒体DNA 4977 bp(mtDNA 4977)缺失与冠状动脉病变严重程度和稳定性的关系。方法：选择90例经冠状动脉造影(CAG)证实的无亲属关系的冠状动脉粥样硬化性心脏病(CAD)患者，包括心绞痛(AP)66例，急性心肌梗死(AMI)24例；冠脉病变支数单支病变32例，双支病变28例，3支病变30例；0< Gensini积分<20分22例，20≤Gensini积分<40分26例，Gensini积分≥40分42例。另外选择60例年龄和病例组相匹配的健康受试者作为对照组。所有受试者均采用巢式PCR法测定外周血mtDNA 4977缺失相对数量，检测超敏C反应蛋白(hsCRP)、白细胞(WBC)计数、总胆固醇(TC)、三酰甘油(TG)、低密度脂蛋白胆固醇(LDL-C)、高密度脂蛋白胆固醇(HDL-C)、空腹血糖(FPG)、餐后2 h血糖(2hPG)水平以及收缩压(SBP)、舒张压(DBP)、体质指数(BMI)等相关指标，同时询问吸烟史、高血压病史及糖尿病史。结果：CAD组吸烟者、高血压病者、糖尿病者、SBP、DBP、TG、FPG、2hPG、WBC及hsCRP显著高于对照组，HDL-C显著低于对照组($P<0.05$或0.01)。CAD患者外周血mtDNA 4977缺失发生率和相对数量显著高于正常对照组($P<0.01$)；mtDNA 4977缺失发生率和相对数量在AP和AMI患者间无显著差别；mtDNA 4977缺失发生率和相对数量随冠状动脉病变支数和Gensini积分的增加而升高；CAD组中mtDNA 4977缺失相对数量与病变支数和Gensini积分呈明显正相关($P<0.01$)，与WBC计数、hsCRP无相关性。结论：外周血mtDNA 4977缺失能反映冠状动脉粥样硬化病变的严重程度，与冠状动脉病变的稳定性无关。

关键词：线粒体DNA 基因缺失 冠状动脉疾病 心绞痛 心肌梗死

Relationship of mitochondrial DNA 4977 bp deletion with severity and stability of coronary atherosclerosis Download Fulltext

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Abstract:

Objective: To investigate the relationship of mitochondrial DNA 4977 bp (mtDNA 4977) deletion in the peripheral blood with severity and stability of coronary atherosclerosis. Methods: We selected 90 unrelated patients with coronary atherosclerotic heart disease (CAD) who were diagnosed by coronary angiography (CAG). The severity of pathological changes of the coronary artery was assessed by the number of diseased coronary branches and Gensini score. The CAD patients were further divided into subgroups according to the clinical types, the number of diseased coronary branches and Gensini score. Control group included 60 healthy age-matched subjects. The relative amount of mtDNA 4977 deletion was determined using a nested polymerase chain reaction (PCR) protocol. White blood cell (WBC) count, high sensitive C reactive protein (hsCRP), lipids (TC, TG, LDL-C, HDL-C), plasma glucose (FPG, 2hPG), blood pressure (SBP, DBP) and body mass index (BMI) were all measured. The information on age, sex and medical histories, including smoking status, hypertension and diabetes mellitus, were obtained in all subjects. Clinical parameters, biochemical indicators, the incidence and relative amount of mtDNA 4977 deletion were compared between the subgroups; the correlation coefficients of mtDNA 4977 relative amount with WBC count, hsCRP and other conventional risk factors for CAD were calculated. Results: The incidence and relative amount of mtDNA 4977 deletion in the peripheral blood in CAD patients were significantly higher than those in the controls ($P<0.01$). No significant differences were found in the incidence and relative amount of mtDNA 4977 deletion between patients with angina pectoris and acute myocardial infarction ($P>0.05$). MtDNA 4977 deletion incidence and relative amount increased with the increase of diseased coronary branches and Gensini score. In CAD patients mtDNA 4977 deletion relative amount was positively correlated with the number of diseased coronary branches and Gensini score ($P<0.01$), not correlated with WBC count and hsCRP. Conclusion: Peripheral blood mtDNA 4977 deletion can be used to predict the severity of coronary atherosclerosis, though it is not associated with the stability of pathological changes of the coronary artery.

Keywords: DNA mitochondrial gene deletion coronary artery disease angina pectoris myocardial infarction

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