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论著

游离血红蛋白及其受体CD163在大鼠动脉粥样硬化过程中的作用

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摘要 目的： 研究游离血红蛋白对大鼠动脉粥样硬化发生发展的影响及机制，并探讨血红蛋白清道夫受体CD163在此过程中的作用。方法: 30只雄性SD大鼠随机分为对照组（C组）、动脉粥样硬化组（模型组，A组）和血管内溶血动脉粥样硬化组（溶血组，P组）。建立血管内溶血动脉粥样硬化模型。14周后检测血清游离血红蛋白（FHb）、丙二醛（MDA）水平；观察主动脉病理学变化；免疫组化及免疫印迹法观察并分析斑块内CD163和血红素氧合酶-1(HO-1)表达。结果: P组及A组FHb、MDA、CD163和HO-1水平明显高于C组。P组主动脉斑块占内膜总面积比(RAAPIs)、FHb、MDA、CD163和HO-1水平明显高于A组，内膜/中膜面积比（I/M）无明显差异（P>0.05）。斑块内CD163和HO-1表达部位及细胞形态一致。血浆FHb水平与斑块内CD163和HO-1表达彼此间呈正相关（r=0.526，r=0.498，r=0.653；P<0.01）。结论: 游离血红蛋白可通过参与脂质过氧化促进动脉粥样硬化的发生发展，并诱导斑块内CD163和HO-1表达上调。

关键词 游离血红蛋白；动脉硬化；脂质过氧化作用；CD163

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Role of free hemoglobin and its receptor CD163 in the rat atherosclerosis formation

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Abstract

<FONT face=Verdana>AIM: To investigate the influence of free hemoglobin on the initiation and progression of atherosclerosis and the role of CD163 in this process.
METHODS: Thirty male SD rats were randomly divided into three groups: control group (group C),atherosclerosis group (group A),atherosclerosis and hemolysis group (group P).The hemolysis and atherosclerosis animal model was established.The free hemoglobin（FHb） and MDA levels in plasma,(RAAPIs) and intima area/midmembrane area (I/M) of each group were measured.The expressions of CD163 and heme oxygenase-1 (HO-1) in atherosclerosis plaques in group A and P were detected and measured by means of immunohistochemistry and Western blotting.
RESULTS: Compared with group C,the FHb,MDA,CD163 and HO-1 in group A and group P increased significantly (P<0.05).Compared with group A,the RAAPIs,FHb,MDA,CD163 and HO-1 in group P increased significantly (P<0.01),while the I/M had no significant difference (P>0.05).The FHb level in plasma and the expressions of CD163 and HO-1 in atherosclerotic plaques correlated with each other (r=0.526，r=0.498，r=0.653；P<0.01).
CONCLUSION: Free hemoglobin promoted the initiation and progression of atherosclerosis through facilitating lipid peroxidation,and upregulating the expressions of CD163 and HO-1.</FONT>

Key words Free hemoglobin Arteriosclerosis Lipid peroxidation CD163

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