

论著

脂肪分化相关蛋白反义寡核苷酸抑制细胞内胆固醇积聚及其在动脉粥样硬化中的改变

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摘要 目的: 研究ADRP与As发生和发展的关系。方法: 使用80 mg/L Ox-LDL和/或1 mmol/L反义ADRP寡核苷酸与小鼠腹腔巨噬细胞共孵育72 h。测定细胞内胆固醇酯; 油红O染色显示细胞内中性脂质; RT-PCR和Western blotting观察反义寡核苷酸对ADRP表达的影响。高胆固醇饲料喂养新西兰白兔12周, 复制As模型。测定血清总胆固醇、低密度脂蛋白胆固醇、高密度脂蛋白胆固醇、甘油三酯及动脉壁胆固醇; 苏丹IV染色显示主动脉病变面积; HE染色观察主动脉及肝脏的病变; 免疫组织化学方法显示ADRP在主动脉病变区及肝脏中的表达。结果: 反义ADRP寡核苷酸使细胞内胆固醇酯由(46.6±3.4) mg/g protein下降到(19.9±1.9) mg/g protein, 细胞内中性脂质明显减少, ADRP基因和蛋白的表达显著下降。喂高胆固醇饲料的动物血清TC、LDL-C、TG及动脉壁胆固醇显著升高, 主动脉病变面积为(40.1±7.3)%, ADRP在主动脉病变区免疫组织化学染色强阳性, 在肝脏中染色阴性。结论: 反义ADRP寡核苷酸能够明显抑制由氧化低密度脂蛋白引起的小鼠腹腔巨噬细胞中胆固醇酯的聚集。ADRP在兔As病变中表达明显增高。提示高表达ADRP促使As发生和发展。

关键词 [动脉硬化](#); [脂蛋白类](#); [LDL](#); [巨噬细胞](#); [小鼠](#); [兔](#)

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ADRP antisense oligodeoxynucleotides reduce cellular cholesterol and the expression of ADRP in atherosclerotic lesions

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Abstract

AIM: To investigate the relationship between ADRP and the development of atherosclerosis. METHODS: Antisense oligodeoxynucleotide of mouse ADRP was constructed. The mouse peritoneum macrophages were cultured with Ox-LDL or Ox-LDL plus the antisense fragment. The cellular cholesterol was measured and the expression of ADRP was observed with RT-PCR and western blotting. New Zealand white rabbits were fed with high cholesterol chow for 12 weeks. The levels of serum lipid and cholesterol content of aortic wall were investigated. The areas of fatty streak of the aortas was measured after staining with Sudan IV. The aortic, and liver specimens with HE and immunohistochemistry staining were observed under light microscopes. RESULTS: Antisense oligodeoxynucleotides of mouse ADRP decreased cellular cholesterol ester, induced cellular lipid droplets and the expression of ADRP. The expression of ADRP was induced by high-cholesterol-diet feeding in rabbit atherosclerotic lesions. The fatty streak of the aorta with immunohistochemistry staining was strongly positive for ADRP in animals fed with high cholesterol chow, and the liver was negative with or without high cholesterol chow. CONCLUSIONS: The expression of ADRP in vessel walls is related to the atherosclerosis, and has a potential role in lipid accumulation in macrophages and pathogenesis of atherosclerosis.

Key words [Arteriosclerosis](#) [Lipoproteins](#) [LDL](#) [Macrophages](#) [Mice](#) [Rabbits](#)

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