

论著

# 载脂蛋白A5 553G>T单核苷酸多态性对血浆脂质代谢的影响

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**摘要** 目的 探讨载脂蛋白A5 (APOA5) 553G>T基因变异在中国镇江地区的频率分布及其对血浆脂质代谢的影响。方法 采用聚合酶链反应-限制性片段长度多态性分析(PCR-RFLP)结合琼脂糖凝胶电泳技术检测152例健康人APOA5 553G>T基因型及等位基因频率分布, 同时采用生化方法测定所有研究对象的血浆脂质水平。结果 APOA5 553T等位基因频率为0.049。GG、GT、TT三种基因型中, GT杂合子个体和TT纯合子个体甘油三酯(TG)和低密度脂蛋白胆固醇(LDL-c)水平明显高于GG纯合子个体。T等位基因携带者(GT+TT)的TG水平较非T等位基因携带者(GG)增高了54.6% ( $2.47 \pm 2.01 \text{ mmol/L}$  vs  $1.20 \pm 1.13 \text{ mmol/L}$ ,  $P < 0.05$ ), LDL-c水平增高28.3% ( $3.33 \pm 1.03 \text{ mmol/L}$  vs  $2.78 \pm 0.82 \text{ mmol/L}$ ,  $P < 0.05$ )。非T等位基因携带者年龄与TG、胆固醇(TC)水平呈正相关, T等位基因携带者年龄与血脂各项指标不相关。男性T等位基因携带者较非T等位基因携带者TG水平增高77.1% ( $P < 0.01$ ), 高密度脂蛋白胆固醇(HDL-c)水平和载脂蛋白A1 (apoA1)水平分别降低6.7% ( $P < 0.05$ )和5.2% ( $P < 0.05$ ), 而女性T等位基因携带者较非T等位基因携带者TG水平增高23.1% ( $P < 0.05$ ), HDL-c水平和apoA1水平略降低, 但无统计学意义( $P > 0.05$ )。结论 APOA5 553G>T单核苷酸多态性对健康人群血浆TG有影响, 553T等位基因与血浆TG和LDL-c水平增高有关, 与HDL-c和apoA1水平降低有关, 这种作用在男性人群较女性人群更为明显。

**关键词** [载脂蛋白A5\(APOA5\)](#) [单核苷酸多态性\(SNP\)](#) [血脂](#)

分类号

## Effects of Apolipoprotein A5 553G→T Single Nucleotide Polymorphism on Metabolism of Serum Lipids

**Abstract** Objective To explore the gene frequency of apolipoprotein A5(APOA5) 553G>T variants in Zhenjiang and its effects on metabolism of serum lipids. Methods The polymorphism of APOA5 553G>T genotypes in 152 healthy individuals were detected by polymerase chain reaction-restriction fragment length polymorphism(PCR-RFLP) and agarose electrophoresis methods, and their serum levels of lipids were also estimated by biochemical methods. Results The frequency of the APOA5 553T allele was 0.049. The serum levels of triglyceride(TG) and low density lipoprotein-cholesterol(LDL-c) in GT and TT genotypes were significantly higher than those in GG type. The T carriers(GT+TT) had a 54.6% increase in TG levels as compared to non-T carriers(GG) ( $2.47 \pm 2.01 \text{ mmol/L}$  vs  $1.20 \pm 1.13 \text{ mmol/L}$ ,  $P < 0.05$ ), and had a 28.3% increase in LDL-c levels ( $3.33 \pm 1.03 \text{ mmol/L}$  vs  $2.78 \pm 0.82 \text{ mmol/L}$ ,  $P < 0.05$ ). The Pearson correlation analysis showed that the serum levels of TG and total cholesterol(TC) were positively correlated with age in non-T carriers but not in T carriers. The male T carriers displayed a 77.1% increase in TG level as compared to non-T carriers( $P < 0.01$ ), and a 6.7% decrease in high density lipoprotein-cholesterol(HDL-c) and a 5.2% decrease in apolipoprotein A1(apoA1) as compared to non-T carriers( $P < 0.05$ ), while the female T carriers displayed a 28.3% increase in TG as compared to non-T carriers( $P < 0.05$ ), and the serum levels of HDL-c and apoA1 were slightly lower than those of non-T carriers, but statistical difference was not found. Conclusion The APOA5 single nucleotide polymorphism is associated with serum TG level in healthy individuals. The 553T allele was contribute to the increase of serum levels of TG and LDL-c and the decrease of serum levels of HDL-c and apoA1, which seems more evident in males than females.

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**Key words** [apolipoprotein A5\(APOA5\)](#) [single nucleotide polymorphism\(SNP\)](#) [serum lipids](#)

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