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论著

CYP1A1，GSTM1 基因型与烟酒诱发人体内淋巴细胞微核的形成

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摘要　目的: 探讨代谢酶CYP1A1 和GSTM1 等位基因型对烟酒诱发人体内淋巴细胞微核的影响。方法:分别应用等位基因特异性(AS) 和多重差别(MD) - PCR 检测CYP1A1 和GSTM1 的等位基因型,应用末梢血微核法检测体内淋巴细胞微核。结果:与无吸烟史健康人群的淋巴细胞平均微核率(MNF 0. 24 ‰)相比,吸烟组MNF 显著增加(0165 ‰,P < 0. 05)重度饮酒可增强这一效应(0.89 ‰,P < 0. 01)与无吸烟史的非易感联合基因型(CYP1A1 I1e/ I1e·GSTM1 + (+ / + 和+ / 0) ,CYP1A1 I1e/ I1e·GSTM1 0/ 0 和CYP1A1I1e/ Val·GSTM1 +) 个体的MNF(0. 42 ‰)相比,吸烟使GSTM1 0/ 0 基因型个体的MNF 显著上升(0. 75 ‰, P < 0. 05)并可使CYP1A1Val/ Val 基因型和易感联合基因型(CYP1A1 I1e/ Val·GSTM1 0/ 0 ,CYP1A1 Val/ Val·GSTM1 + 和CYP1A1 Val/ Val·GSTM1 0/ 0) 个体的MNF 均上升约1 倍(0. 83 ‰和0. 85 ‰,0110 > P > 0. 05) 结论:吸烟诱发体内淋巴细胞MNF 显著增加,重度饮酒增强这一效应。烟酒诱发微核形成与个体CYP1A1 和GSTM1 的遗传多态性密切相关。

关键词　等位基因型　CYP1A1　GSTM1　微核　吸烟

CYP1A1 AND GSTM1 GENOTYPES AND IN VIVO MICRONUCLEUS FORMATION IN HUMAN

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Abstract Purpose : To investigate the effects of CYP1A1 and GSTM1 allelotypes on the in vivo micronucleus formation in human peripheral lymphocytes induced by smoking and drinking. Methods : The allelotypes of CYP1A1 and GSTM1 were detected by allele-specific (AS)- and multiplex differential (MD)-PCR respectively. Micronuclei were detected by the in vivo micronucleus test in human capillary blood lymphocytes. Results : It showed that cigarette smoking increased significantly MNF in lymphocvtes (0. 65 ‰, P < 0. 05) as compared with those of healthy non-smokers (0. 24 ‰) , heavy alcohol drinking enhanced this effect (0. 89 ‰ P < 0. 01) ; smoking increased significantly MNF in lymphocytes from individuals with the genotype GSTM1 0/ 0 (0. 75 ‰, P < 0. 05) and induced the statistically marginal increase of MNF in lymphocytes of individuals with the genotype CYP1A1 Val/ Val and the susceptible combined genotypes CYP1A1 Val/ Val·GSTM1 0/ 0 , CYP1A1Val/ Val·GSTM1 + (+ / + and + / 0) and CYP1A1 Val/ Ile·GSTM1 0/ 0 as compared wich those of individuals with the non-susceptible combined genotypes CYP1A1 Ile/ Ile·GSTM1 + , CYP1A1 Ile/ Ile·GSTM1 0/0 and CYP1A1 Ile/ Val ·GSTM1 + . Conclusion : Cigarette smoking induced the significant increase of MNF in lymphocytes of human peripheral blood , heavy alcohol drinking enhanced obviously the effect . The in vivo micronucleus formation induced by smoking and drinking had the close association wich CYP1A1 and GSTM1 allelotypes.

Keywords allelotypes　CYP1A1　GSTM1　micronucleus　cigarette smoking

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