

Genetic polymorphisms of N-acetyltransferase 1 and 2 and risk of cigarette smoking-related bladder cancer.

邱弘毅

Hsieh FI;Pu YS;Chern HD;Hsu LI;Chiou HY and Chen CJ

Abstract

Aromatic amines from cigarette smoking or occupational exposure, recognized risk factors for bladder cancer, are metabolized by N-acetyltransferases (NAT). This study examined the association of (NAT) 1 and 2 genotypes with the risk of smoking-related bladder cancer. A total of 74 pathologically confirmed bladder cancer patients and 184 controls were serially recruited from the National Taiwan University Hospital. History of cigarette smoking and other risk factors for bladder cancer was obtained through standardized questionnaire interview. Peripheral blood lymphocytes were collected from each subject and genotyped for NAT1 and NAT2 by DNA sequencing and polymerase chain reaction-restriction fragment length polymorphism methods. Allele frequency distributions of NAT1 and NAT2 were similar between cases and controls. There was a significant dose-response relationship between the risk of bladder cancer and the quantity and duration of cigarette smoking. The biological gradients were significant among subjects carrying NAT1*10 allele or NAT2 slow acetylators, but not among NAT2 rapid acetylators without NAT1*10 allele. The results are consistent with the hypothesis that NAT1 and NAT2 might modulate the susceptibility to bladder cancer associated with cigarette smoking.