번호 02-6

제 목	국문	한국인 방광암 발병의 위험요인으로서 CYP1A1, CYP2E1, NAT1, NAT2의 유전자 다형성의 역할에 관한 연구
	영문	The Role of Genetic Polymorphisms of CYP2E1, CYP1A1, NAT1, and NAT2 in Bladder Cancer in Korea
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1. 연구 목적

Although the association of genetic polymorphisms in NAT1 and NAT2 with bladder cancer have been reported, the results are controversial and few numbers of studies have been indicated the association of CYP1A1, CYP2E1 with bladder cancer, particularly in Asian population. A hospital based case-control study was conducted to evaluate the role of genetic polymorphisms of CYP1A1, CYP2E1, NAT1, and NAT2 in development of bladder cancer.

2. 연구 방법

The study population consisted of 232 histologically confirmed prevalent male bladder cancer cases and 165 male controls with no present or previous history of cancer or systemic illnesses, who visited the same urology departments in three teaching hospitals in Seoul during February 1997 - May 1999 (Seoul National University Hospital, Boramae Hospital, and Samsung Medical Center). Information on demographic characteristics and smoking was collected by trained interviewers with standardized questionnaire. CYP1A1 genetic polymorphisms were determined for 195 bladder cancer cases and 141 controls by PCR-RFLP with *MspI* digestion and for 197 cases and 156 controls with *NcoI* digestion. CYP2E1 genetic polymorphisms were determined for 201 cases and 146 controls by PCR-RFLP with *RsaI* digestion. NAT1 genetic polymorphisms were determined for 199 cases and 164 controls with *MboII* digestion, and NAT2 genetic polymorphisms were determined for 193 cases and 164 controls with *KpnI, TaqI,* and *BamHI* digestion. Adjusted odds ratios and 95% confidence intervals were estimated by multinominal logistic regression using SPSS 9.0 for windows.

3. 연구 결과

The frequency of CYP1A1(*NcoI*) m/m genotype in bladder cancer cases was higher than in the controls; 19 of 197(9.6%) vs. 5 of 156(3.2%) (OR=3.2, 95% CI=1.2-8.9). Like CYP1A1, the frequency of CYP2E1(*RsaI*) c1/c1 genotype in cases was higher than in controls; 114 of 201(56.7%) vs. 62 of 146(42.5%). Men with CYP2E1(*RsaI*) c1/c1 genotype had increased risk of development of bladder cancer compared to men with at least one c2 allele (OR=1.7, 95% CI=1.1-2.7). The bladder cancer risk increased as the number of c1 allele increased (p for trend=0.005). The risk increased as the amount of smoking increased (p for trend=0.009). When data were analyzed for the interaction between smoking and CYP2E1 genetic polymorphisms, smokers with c1/c1 genotype have 2.5 greater risk in development of bladder cancer (95% CI=1.0-6.2) compared to nonsmokers with c2 allele (p for interaction=0.008). But no association was found between the polymorphisms of NAT1(*MboII*), NAT2, CYP1A1(*MspI*) and the development of bladder cancer.

4. 고찰

Our findings suggest that genetic polymorphisms, especially in CYP1A1(*NcoI*, m/m) and CYP2E1(*RsaI*, c1/c1) are associated with the increased risk of development of bladder cancer among Koreans. The interaction between genetic polymorphisms of CYP2E1(*RsaI*, c1/c1) and smoking may play an important role for bladder cance