

Cytochrome P450 2E1 polymorphism and nasopharyngeal carcinoma development in Thailand: a correlative study

ABSTRACT

We found no statistical significance in our findings despite having a moderate sample size. However, our study yielded results similar to the Taiwan study with only slight precision. The higher RR observed in different populations indicated that CYP2E1 is one of several NPC susceptibility genes and that the RsaI minus variant is just one mutation that affects phenotype.

INTRODUCTION

The majority of cancers of the mouth are caused by the CYP2E1 genetic variation. The authors of this paper hypothesize that the CYP2E1 polymorphism may predispose to nasopharyngeal carcinoma development and/or nasopharyngeal cancer in a subset of Asian immigrants.

Methods

The authors used data from the National Comprehensive Cancer Network (NCCN) database to identify the subjects and their ethnic backgrounds. The subjects were identified through the NCCN's national health statistics and the authors extracted the information from the National Health Interview Survey (NHIS).

Results

The results show that the subjects were mostly Chinese (88.1%). The mean age was 29 years (range: 18–39). NPC is a rare tumor that occurs in most regions of the world, with incidence rates typically below 1 per 100,000 people/year. It is more common among Southern Chinese living in Guangdong Province, where the incidence rate is 30-50 per centile compared to 1 per 100 thousand people or higher in white Europeans. The disease also occurs at moderate frequencies (3-10 per 10 percent) in several non-Chinese ethnic groups such as Malay, Thai and Vietnamese. Several factors, both environmental and genetic, have been associated with high relative risk. The metabolic activation of procarcinogenic proteins (CYP2E1), which is involved in the development of complex cell cancers, is believed to be an important enzyme. Nitrosamine is thought to play a role in this process and can lead to various types of cancer, including salted fish that are eaten by Chinese people.

CONCLUSION

The reported crude odds ratio is 2.19 [95%CI = 0.62-8.68], while the adjusted odds ratio is 1.33 [95%CI = 0.68], which is more similar to the Taiwanese odds factor of 2.6. This study confirms a previous Taiwan study that CYP2E1 is one of several NPC susceptibility genes, with the RsaI minus variant being more directly related to this phenotype than just polymorphism.