

## Letter to the Editor

## Presence of Evolutionary Pressures or Genotyping Error

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I have read with great interest the recent study by Ryu et al., which is published in the Journal of Korean Medical Science (1). The authors investigated the possible association between genetic polymorphisms in *XRCC1* at codons 194 (rs. 1799782) and 399 (rs. 25487) and the risk of papillary thyroid carcinoma in a Korean sample. They found that there was no significant association between these polymorphisms and the susceptibility to papillary thyroid carcinoma. I would like to make a few comments about the study.

The authors mentioned the prevalence of genotypes among controls did not deviate from Hardy-Weinberg equilibrium (HWE) (1). However, based on data presented in Table 2 of the study of Ryu et al., I found that for the Arg399Gln polymorphism of *XRCC1*, there was a large difference between expected and observed frequencies for the genotypes ( $\chi^2 = 13.684$ ,  $df = 1$ ,  $P = 0.0002$ ). In the presence of evolutionary pressure, or nonrandom mating, statistically significant deviation from the HWE might be observed. It should be noted that the deviation from HWE may be a sign of genotyping error (2).

Although I am not familiar with population genetics of Korean populations, according to previous reports I understand that among Asian populations (including Korean population), the prevalence of the Gln399 allele is about 0.30 (3-5). But the frequency of Gln399 allele was reported 0.185 by Ryu and his co-workers (1). Based on my search, there is no study describing the association between the Arg399Gln polymorphism and evolutionary pressures among general population. Taken together, I think that the above mentioned deviation from HWE was observed because of some kind of genotyping error(s). Therefore the results of Ryu et al. (1) should be interpreted with caution.

Finally, considering that these two SNPs are closely linked loci, the authors should have used one of the available software's for haplotype analysis.

## CONFLICTS OF INTEREST

Conflict of interest relevant to this article was not reported.

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