Association between ERCC1 and ERCC2 polymorphisms and breast cancer risk in a Chinese population

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Genet. Mol. Res. 15 (1): gmr.15017263
Received July 21, 2015
Accepted October 26, 2015
Published March 11, 2016
DOI http://dx.doi.org/10.4238/gmr.15017263

ABSTRACT. We conducted a case-control study to investigate the role of ERCC1 rs3212986 and ERCC2 rs13181 gene polymorphisms in the development of breast cancer. Between March 2012 and March 2014, a total of 242 newly diagnosed breast cancer patients with histopathologically confirmed primary breast cancer and 242 healthy controls were recruited. Genotyping of ERCC1 rs3212986 and ERCC2 rs13181 polymorphisms was carried out using polymerase chain reaction-restriction fragment length polymorphism analysis. Unconditional logistic regression analyses indicated that the TT genotype of rs3212986 was associated with a higher risk of breast cancer compared to that associated with the GG genotype (OR = 2.05, 95%CI = 1.13-3.78). In dominant and recessive models, we found that the rs3212986 polymorphism was associated with increased risk of breast cancer, and the ORs were 1.50 (95%CI = 1.03-2.18) and 1.74 (95%CI = 1.01-3.11), respectively. In summary, we found that the ERCC1 rs3212986 polymorphism was associated with the development of breast cancer.

Key words: ERCC1; ERCC2; Polymorphism; Breast cancer