



Role of ERCC2 and ERCC3 gene polymorphisms in the development of osteosarcoma

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ABSTRACT. We conducted a case-control study to investigate the role of common SNPs in ERCC2 (rs13181 and rs1799793) and ERCC3 (rs4150441 and rs4150506) in the development of osteosarcoma. A 1:2 matched case-control study was conducted. Between January 2012 and December 2013, 141 patients with pathologically diagnosed osteosarcoma and 282 controls were recruited in our study. Genotyping of ERCC2 rs13181 and rs1799793 as well as ERCC3 rs4150441 and rs4150506 were performed using polymerase chain reaction coupled with restriction fragment length polymorphism. The genotype distributions of ERCC2 rs13181 and rs1799793 as well as ERCC3 rs4150441 and rs4150506 showed no significant difference between patients with osteosarcoma and controls, as analyzed by χ^2 tests. Multivariate logistic regression analysis did not reveal significant associations between ERCC2 rs13181/rs1799793 or ERCC3 rs4150441/ rs4150506 gene polymorphisms and the development of osteosarcoma in codominant, dominant, and recessive models. In conclusion, we did not find any association between ERCC2 or ERCC3 gene polymorphisms and the development of osteosarcoma. Future studies with larger sample sizes may contribute in elucidating the impact of ERCC2 and ERCC3 gene polymorphisms on osteosarcoma risks.

Key words: ERCC2; ERCC3; Polymorphism; Osteosarcoma