**Multidrug resistance protein 2 genetic polymorphism and colorectal cancer recurrence in patients receiving adjuvant FOLFOX-4 chemotherapy**

ABSTRACT

Multidrug resistance protein 2 (MRP2), encoded by the ATP-binding cassette C2 (ABCC2) gene, is an efflux pump located on the apical membrane of many polarized cells, which transports conjugate compounds by an ATP-dependent mechanism. The correlation of G1249A ABCC2 polymorphism with the development of colorectal cancer (CRC) and poor prognosis was evaluated in patients who were treated with fluorouracil/leucovorin (FL) plus oxaliplatin (FOLFOX-4). A total of 50 paraffin embedded tissue samples collected from CRC patients were analyzed to identify the polymorphism. Patients were in stage II/III and received postoperative FOLFOX-4 chemotherapy. As a control group, an equal number of unrelated healthy subjects were enrolled in the study. The polymorphism was genotyped by the polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) method, and results were compared with clinicopathological markers, early relapse and survival rates. During the 12 months of follow-up, local and distant recurrences were observed in 15 (30%) patients. No significant difference in the distribution of wild-type and polymorphic genotypes was observed between the patient and control groups and between the patients who experienced recurrence within 1 year and those who did not (all P>0.05). In conclusion, the G1249A polymorphism is not associated with CRC risk and early recurrence. However, significant correlation was observed between G1249A polymorphism and the overall survival and disease-free survival of the patients.

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| **Keyword:** | ABCC2/MRP1; Colorectal cancer; G1249A; Oxaliplatin; Recurrence; Survival |