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The correlations between the C677T and A1298C mutations of the MTHFR gene and therapeutic prognostic elements in colorectal cancer

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Abstract

The MTHFR gene polymorphism may influence the risk of developing sporadic CRC. The aim of this study is to assess the relationship between the mutations of this gene and certain aspects of the surgical practice: the tumoral resectability, the tumoral recurrence and the disease-free interval. 69 patients with sporadic colorectal cancer that underwent surgery at the 3rd Surgery Department of Cluj-Napoca between October 2003 – May 2005 were randomly selected. The correlations between the C677T, A1298C mutations and the prognostic factors mentioned above were analyzed. The results show that the C677T mutation increases the risk of non-resectability (OR=3,5, p=0,099), while the A1298C mutation does not (OR=1,1). For the A1298C mutation there is a major risk of recurrence (OR=3,063), but in the group with C677T mutation there is only a small increase of the risk, non-significant statistically (OR=1,196). Both the groups with the C677T mutation and the "wild" genotype 1298AA have more precocious recurrences then the other groups, so a shorter disease-free interval (HR=0.9458 respectively 3.1070). The patients with the A1298C mutations have more often non-resectable recurrences. In conclusion, the mutations of the MTHFR gene are a prognostic factor for the treatment and evolution of patients with CRC.

Key words: MTHFR, sporadic CRC, resectability, disease-free interval

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