Analysis of O6-methylguanine-DNA methyltransferase methylation status in sporadic colon polyps

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**ABSTRACT**

**Background/aim:** The aim of our study was to check how MGMT methylation status together with known factors influenced the risk of colon cancer development.

**Materials and methods:** We examined patients with colon polyps. Information concerning gender, age, lifestyle, diet, anthropometry and medical information, including cancer and family history of cancer, was analyzed. Polymorphism variety of MGMT gene was investigated in another study. Genetic analysis for MGMT methylation assessment was performed for polyp tissue samples from 143 patients.

**Results:** Positive methylation MGMT status was found in 55 patients. There was no correlation between gender and MGMT methylation status \((p = 0.43)\). We did not find correlation between patients younger and older than 60 \((p = 0.87)\). There was no correlation between smoking and MGMT methylation status \((p = 0.36)\). We did not find correlation between BMI and MGMT methylation status \((p = 0.86)\). We did not find correlation between MGMT methylation status and colon cancer in familial history \((p = 0.45)\).

**Conclusion:** Our study showed no correlations between methylation status of MGMT polymorphisms and clinical features like age, gender, polyp localization, smoking status, or obesity. It has been shown previously that MGMT methylation status may show nonspecific methylation in colon polyps. Gene methylation status in adenoma tissues has also been associated by other authors with the adenoma’s size, histology, and degree of atypia. In our study, we evaluated the gene methylation status in colon polyps and found no association with adenoma characteristics. The present study showed no correlation for MGMT methylation in polyps in different regions of colon.

**Keywords:** MGMT polymorphism, Methylation, Colon polyps, Colon cancer, Adenomatous polyps, Endoscopy