

The growth differentiation factor-15 (GDF-15) can be useful in the detection of distant metastases in sera of colorectal cancer patients

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ABSTRACT

Purpose: Growth differentiation factor-15 (GDF-15) protein belongs to a transforming growth factor- β family which determines the growth and differentiation of cells. In cancers, GDF-15 influences on the proliferation, differentiation, viability, migration and invasiveness of cancer cells. The aim of our study was to evaluate the expression of GDF-15 in the tissue and its levels in sera of patients with colorectal cancer.

Materials and methods: The level of GDF-15 in the sera of 55 patients diagnosed with colorectal cancer was determined using the ELISA method whereas expression of this protein was performed by immunohistochemical method.

Results: The mean value of GDF-15 levels in the sera of patients with colorectal cancer was

significantly higher than in healthy control group ($p < 0.001$). The expression of GDF-15 in the tissue was weak, moderate and strong in 23.6%, 15.7% and 60.7% cases, respectively. Statistical analysis showed that the expression of GDF-15 correlated with patients' age ($p < 0.005$) and non-mucinous type of cancer ($p < 0.001$). The high GDF-15 levels in the serum was associated with tumor size ($p < 0.01$) and distant metastases ($p < 0.05$).

Conclusions: According to our results, we postulate that the level of GDF-15 in serum can be used to assess the metastatic behavior of colorectal cancer.

Key words: Colorectal cancer, Growth differentiation factor-15, macrophage inhibitory cytokine-1, serum.

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