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 use to assess the metastatic behavior of colorectal cancer.

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

DOI: 10.5604/01.3001.0009.5108