

Summary

Despite extensive progress in understanding of the molecular pattern of the tumor, growing possibilities of chemotherapy and surgical treatment, colorectal cancer remains the significant cause of death worldwide. Surgical treatment alone has already reached in oncologic radicality its limits, and therefore the surgeons turned to the molecular base of tumor growth in an effort to find markers that allow to operate patients at lower stages of the disease and thus improve the results and prognosis of the disease. And also to find markers, which, after curative operation will find a possible relapse in early stage to enable the surgeon to perform second curative intervention. Tumor markers are substances that often arise in connection with the changed metabolism transformed tumor cells, and therefore their levels increased in the presence of malignancy. Serum tumor markers are important parameters that may facilitate the prediction of the disease, its progression or regression (remission). Tumor markers are clinically used for screening, primary diagnosis, staging, prognosis, but particularly for predicting recurrence of disease, monitoring therapy. This work aims to summarize the current knowledge about the colorectal cancer markers, outline the possible development and present results of relationship between the levels of potential markers for disease prognosis in patients undergoing curative surgical intervention. To this study patients who underwent curative colorectal resection in Surgical Department of Thomayer Teaching Hospital Prague (Head Assoc. Prof. Visokai Vladimir, MD, Ph.D.) and the Surgical Clinic of University Hospital Pilsen (Head Prof. Třeška Vladimir, MD, PhD.) have been included. Patients were operated between years 2001 - 2006. There were enrolled 174 patients with colorectal cancer and 50 patients in the control group. Blood was collected in patients pre-operatively, following markers were investigated: CEA, CA 19-9, TK, TPA, TPS, I-CAM, V-CAM, IL 6, IL 10, TIMP-1, MMP 9, VEGF, adiponectin and leptin. Statistical evaluation was performed using SAS software (Statistical Analysis Software) release 8.02 and STATISTICA release 5.1. In patients with colorectal cancer we have shown significant increase in the following parameters: CEA, CA 19-9, TPA, IL 6 IL 10, TIMP-1 and adiponectin. We did not find significant changes in the levels of TPS cytokeratins, adhesion molecules, angiogenetic factors and leptin. Findings for routine practice: There were no satisfying results for screening in monitored parameters. Also for early diagnosis of primary tumor there were currently no suitable parameter neither their combination. Some parameters are important for determining prognosis of the disease: elevation of CA 19-9 predict unfavorable prognosis, VEGF is a prognostic factor for overall survival, CEA is a parameter that is related mainly to disease progression. Further intensive study of tumor biological activity should result in development of targeted therapy, which should support establishing of natural equilibrium between substances promoting and inhibiting cellular growth, similarly like in healthy organism.