Abstract

Stomach cancer is a malignant neoplastic disease, which is caused by malignant transformation of the gastric mucosal epithelium. Elderly patients are more frequently affected, the majority of the patients are males. Stomach cancer has some typical features like minor symptomatology and early metastasis founding. Nowadays, a mild decrease of incidence is registered. Treatment of stomach cancer depends on its location and stage. Because of its relative chemo- and radioresistance, surgical resection is the only one potentially curable method, although there is high number of recurrences.

An amplification and overexpression of HER2 receptor is detected in approximately 10 - 20 % patients with stomach cancer. This overexpression correlates with worse prognosis of disease. Treatment with a monoclonal antibody named trastuzumab, Herceptin® could significantly elongate their life. Trastuzumab is now widely and successfully used for the treatment of female patients with breast carcinoma. Detection of HER2 amplification is there needed.

Treatment with trastuzumab can be useful only when HER2 positivity of tumor is determined. This determination should be made by a reliable test with sufficient sensitivity and specificity. The aim of this work is to summarize the methods of molecular biology that are used in HER2 status determination in stomach cancer, this work also discusses important links connected with this issue.

Key words:
Gastric cancer, HER2/neu receptor, amplification, immunohistochemistry, in situ hybridization, Q-PCR.