8. SUMMARY

Stomach cancer is the third most common neoplasm in the world. Gastric adenocarcinoma is a rapidly progressive, multistep process with complex etiology. The H. pylori bacteria is considered to be the first stage carcinogen. Gastric cancer at an early stage of development gives non-specific symptoms, so it is diagnosed at an advanced stage when the prognosis is unfavorable. One of the markers used in the diagnosis of stomach cancer is carcinoembryonic antigen (CEA). CEA (CEACAM-5) is also routinely used in diagnosis of others cancer of the large intestine, pancreas, breasts, lungs and other non-cancerous diseases. Lack of high specificity of this antigen makes it important to examine other proteins from the CEACAM family that could be a markers for the early detection of stomach cancer.

Therefore, the aim of this study was to evaluate tissue expression of CEACAM-1, CEACAM-3, CEACAM-5, CEACAM-6 proteins in 76 patients with gastric cancer. Proteins expression was assessed by immunohistochemistry and then the relationships between adhesion molecules of the CEACAM family were analyzed with the selected clinical-histopathological parameters, ie sex, patient's age, diameter of tumor, tumor location in the stomach, histological type, histological grade, Lauren’s type, depth of invasion (pT), the presence of metastases to the lymph nodes, the presence of metastases to distant organs, infiltration of blood vessels and lymphatic vessels by cancer cells, perineural infiltration, tumor inflammation, desmoplasia and H.pylori infection and the overall post-operative survival of patients.

In our studies it has been observed that positive expression of CEACAM-1 in high-differentiated carcinomas may be responsible for the adhesion of tumor cells. In addition, positive expression of CEACAM-5 correlates with the presence of perineural invasion and tumor infiltration to lymphatic vessels, which may suggest the function of CEACAM 5 in the migration of tumor cells. The loss of tissue expression of CEACAM-5 is associated with a shorter overall post-operative survival. Therefore, CEACAM-5 expression in cancer tissue may be a promising prognostic marker. Positive CEACAM-6 expression in a diffuse type according to the Lauren classification and adenocarcinomas with a mucous component may prove the CEACAM-6 histopathological properties. In addition, the CEACAM-3 adhesive protein may be involved in the pathomechanism of H.pylori infection.