Detection of lymph nodes for micrometastasis in high risk patients with colorectal cancer

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Background

Colorectal carcinoma (CRC) is one of the most common gastrointestinal malignancies in Uzbekistan, and the incidence continues to steadily increase. The prognosis for patients with colorectal cancer is represented by lymph node (LN) metastases. Approximately 42% of all colorectal cancer patients with histologically node-negative (N0) disease, within 5 years develop regional or distant metastases. The detection of disseminated tumor cells in the lymph nodes after curative resection could help to identify a patient subgroup at risk for disease relapse who could benefit from adjuvant therapy.

Materials and methods.

The study included 87 cases (56 men – 64.37% and 31 female – 35.63%) of colorectal carcinoma followed by curative resection. The average age was of 65.3 ± 13.2 years for males and 67.3 ± 12.8 years for women. The investigation for micrometastases in pN0 patients is done by immunohistochemistry for cytokeratin 20 in lymph nodes which are tumour negative upon standard pathological examination with H&E staining. Patients with CK20 positive lymph nodes (pN0micro+) are randomized for adjuvant chemotherapy following the CAPOX treatment scheme or observation. The primary endpoint is 5-year disease free survival (DFS).

Results

The incidence of lymph node involvement was significantly increased, from 15% (13/87 patients) by H&E staining, to 38% (33/87 patients) by CK 20 immunostaining (P < 0.0001). Lymph node micrometastasis was frequently found in tumors with a diameter more than 3.0 cm, of those that were poorly differentiated, deeply invaded, showed lymphatic or vascular invasion. Patients with tumors with micro-lymph node metastasis detected by CK immunostaining had a significantly lower 5-year survival rate (P < 0.01) than those without such metastases.

Conclusion

Tumors more than 3.0 cm in diameter and those that exhibit poor differentiation, deep invasion (i.e., to the submucosa), lymphatic or vascular invasion are risk factors for lymph node metastasis in colorectal cancer. Thus, it is recommended that cancers confined to the mucosa that are more than 3.0 cm in diameter should not be treated with limited surgery without lymphadenectomy and patients of high risk should be examined by immunohistochemistry for CK20 expression in lymph nodes.

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