

PROGNOSTIC SIGNIFICANCE OF EXPRESSION NEYROPILIN 1 IN LOW-GRADE COLON CANCER

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Introduction. Genetic studies have yielded strong evidence that NRP1 required for vascular morphogenesis. NRP1 also identified as a receptor for VEGF, expressed on tumor and endothelial cells [1]. Although it possess the capability of interacting with VEGF, the data that, after VEGF binding to it a transmit signal is absent. [2]

Purpose. Determine the value NRP1 expression level in low-grade colon cancer for prediction adjusted disease- free survival of patients.

Materials and methods. Study surgical material of 55 patients (20 men and 35 women) aged 37.3 to 82.8 years (63.43 (56,9-69,5)) with histologically verified low-grade cancer of the colon (G1-2). The study was performed on paraffin sections, 3-4 microns thick, stained with hematoxylin and eosin, immunohistochemical - performed using mouse monoclonal antibodies to NRP1 (ab81321) by standard methods. Quantitation of the level of expression was performed using the program Aperio Image Scope [3]. Statistical analysis was performed using STATISTICA 10.0 (SNAXAR207F394425FA-Q).

Results. Almost all cancers (90.9%) were located in the distal. 29 patients have been verified adenocarcinoma G1 (52.7%) and 26 - G2 (47,3%). In 39 cases (70.90%) cancer sprouted entire thickness of the bowel (T3), in 14 cases (25.45%) - muscle (T2), 1 patient - submucosa (T1), and 1 patient had a tumor sprouted visceral peritoneum (T4). At the time of diagnosis in 32 patients metastases were found in the regional lymph nodes (N1-2 - 32 (58.2%)). Hematogenous metastases were diagnosed in 6 patients (10.9%). In 20 patients (36.42%) with time having relapses, with 6 of them during the first two years after surgery, and 13 for five years. On average, the tumor recurred after 2.46 years (1,90-3,69). Overall survival (January 2016) was 6.2 years (3,5-12,5). The most accurate indicator reflecting essentially a cure for cancer is adjusted disease-free survival. In its calculation of the patients who died of the underlying disease, as well as those patients who during his lifetime was diagnosed locoregional recurrence or distant metastases are counted as dead - on relapse diagnosis time and / or metastasis, or death [4]. Adjusted disease-free survival was 3.1 years (2,2-4,3).

We evaluated NRP1 expression in the parenchyma and stroma of tumors, as well as the edges of the incision. Statistically significant differences in the expression or in tumor tissue ($p = 0.62$) or in the edges of the operating sections ($p = 0.59$) weren't found.

Conclusions. The level of NRP1 expression in low-grade tumors of colon can't be used as an independent prognostic factor.

Literature.

1. Klagsbrun, M. The role of neuropilin in vascular and tumor biology / M. Klagsbrun, S. Takashima, R. Mamluk // Adv Exp Med Biol. – 2002. - №515. – P. 33-48.
2. Neufeld, Gl. The interaction of Neuropilin-1 and Neuropilin-2 with tyrosine-kinase receptors for VEGF / Gl. Neufeld, O. Kessler, Y. Herzog // Adv Exp Med Biol. – 2002. - №515. – P. 81-90.
3. Штабинская, Т.Т. Роль уровня экспрессии маркеров ангиогенеза в прогнозе эффективности послеоперационной химиотерапии колоректального рака / Т.Т. Штабинская, М. Боднар, С.А. Ляликов, В.А. Басинский, А. Маршалэк // Журнал «Вестник ВГМУ». – 2015. - №6(14). – С. 84-92.
4. Барсуков, Ю.А. Сравнительный анализ хирургического и комбинированного лечения больных операбельным раком прямой кишки (результаты рандомизированного исследования) / Ю.А. Барсуков, Л.В. Николаев, Р.И. Тамразов [и др.] // Практическая онкология. – 2002. - №2(3). – С. 10