

Summary

**ФАКТОРЫ РИСКА НАРУШЕНИЯ СРАЩЕНИЯ ПЕРЕЛОМОВ И ИХ
ПРОГНОСТИЧЕСКАЯ ЦЕННОСТЬ**

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На основании ретроспективного исследования и применения нелинейных методов статистического анализа установлено, что наличие сахарного диабета, заболевания периферических сосудов, курение, прием нестероидных противовоспалительных препаратов, наличие открытого перелома и высокоэнергетический механизм травмы связаны с высшим риском формирования нарушений сращения переломов. Тщательное изучение факторов риска и осознание их роли позволит улучшить результаты лечения пациентов с нарушениями сращения переломов и снизить уровень инвалидности среди лиц трудоспособного возраста.

**PROGNOSTIC EXPRESSION SIGNIFICANCE OF NEUROPILIN 1
IN COLON ADENOCARCINOMA WITH SYNCHRONOUS
HEMATOGENOUS METASTASES**

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Introduction. Recent investigations highlighted strong similarities between neural crest migration during embryogenesis and metastatic processes [1]. Indeed, some families of axon guidance molecules were also reported to participate in cancer invasion: plexins/semaphorins/neuropilins, ephrins/Eph receptors, netrin/DCC/UNC5. Neuropilins (NRPs) are transmembrane non tyrosine-kinase glycoproteins first identified as receptors for class-3 semaphorins. They are involved in neural crest migration and axonal growth during development of the nervous system. Since many types of tumor and endothelial cells express NRP receptors, various soluble molecules were also found to interact with these receptors to modulate cancer progression.

Aim: to establish prognostic expression significance of NRP1 in colon adenocarcinoma with synchronous hematogenous metastases.

Materials and methods. Criteria for inclusion in the study: adenocarcinomas of different degrees of differentiation. Exclusion criteria

from the study: primary-multiple cancers and neoplasms that have the histological structure of the mucosa, micropapillary adenocarcinoma, cribroform comedo carcinoma, ring-cell, squamous and undifferentiated cancer.

The significance of NRP1 expression in colon adenocarcinoma for the prognosis of the adjusted disease-free survival (ADFS) was established by a prospective longitudinal study of 72 tumors verified and removed in 29 men (40.3%) and 43 (59.7%) women.

The immunohistochemical study was performed using rabbit monoclonal antibodies to NRP1 (Ab81321, clone EPR3113) according to standard procedure. A quantitative assessment of the expression level was performed using the Aperio Image Scope program [2]. The total, parenchymal and stromal positivity of NRP1 in the tumor was calculated.

Statistical analysis was performed using «STATISTICA 10.0» (SNAXAR207F394425FA-Q). Due to the fact that the distribution of quantitative parameters differed from normal ($p < 0.05$), a comparative analysis was conducted using nonparametric statistics methods.

Results. In 12 (16.7%) patients from the study group, hematogenous metastases were found at the time of diagnosis. In 8 patients (11.1%) at the time of detection of the disease, both lymphogenous and hematogenous were determined (in the liver and lungs - 75% and 25%, respectively). Median ADFS of patients with hematogenous metastases was 1.8 (1.0-2.4) years. Over the course of time, 15 patients (20.8%) developed new metastases to the liver, lungs, kidneys, bones and ovaries, while in 6 patients (8.33%) they were first identified after surgical removal of the tumor. The median appearance of distant metastases was 1.83 (1.23–4.06) years.

The levels of NRP1 positivity in the parenchymal and stromal components of the tumor, as well as the overall level of positivity, are shown in Table 1.

Table 1 - NRP1 Expression Depending on the Hematogenous Tumor Spread

Expressing positivity	Hematogenous spread		p
	pM0	pM1	
Overall	0,735 (0,620-0,801)	0,691 (0,611-0,710)	0,529
Parenchymal	0,563 (0,510-0,687)	0,548 (0,545-0,654)	0,844
Stromal	0,816 (0,722-0,893)	0,789 (0,756-0,866)	0,935

As can be seen from Table 1, the NRP1 expression was higher in adenocarcinoma without synchronous metastases, but these differences were insignificant ($p > 0.05$). Also, there were no significant differences in the expression of the studied marker of angiogenesis, depending on the appearance of new metastases ($p > 0.05$).

The construction of a multifactor model for predicting a 3-year outcome depending on hematogenous spread and NRP1 expression was performed using Cox regression using the direct step-by-step method. A grouping feature was selected cancer outcome after 3 years from the time of surgical intervention, as measured by ADFS. It was found that only hematogenous metastasis significantly affects the three-year survival rate. The values of the likelihood function, the statistical criteria of the model for each of the regression steps are presented in Table 2.

Table 2 - Omnibus Tests of Model Coefficients

Step	-2 Log Likelihood	Overall (score)			Change from previous stge		
		Chi-square	df	Sig.	Chi-square	Df	Sig.
1a	18,018	5,573	1	,018	3,828	1	,05

As can be seen from table 2, the coefficient model of significance, its quantitative value allows you to test the result of the result.

The value of the coefficient of external and its characteristics are presented in Table 3.

Table 3 - Variables in the Equation

		B	SE	Wald	df	Sig.	Exp (B)
Step 1	M	-2,364	1,238	3,647	1	0,05	0,094

Thus, a significant morphological risk factor for the development of an unfavorable outcome of the disease within 3 years after surgical removal of the tumor is: the presence of hematogenous metastases, which is confirmed by the data in Table 3. Increasing the pM category by 1 reduces the patient's survival by 0.094 times.

Conclusions. The expression level of NRP1 in colon adenocarcinoma doesn't depend on the hematogenous spread of the tumor and can't be used as an independent prognostic factor.

Литература

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PROGNOSTIC EXPRESSION SIGNIFICANCE OF NEUROPILIN 1 IN COLON ADENOCARCINOMA WITH SYNCHRONOUS HEMATOGENOUS METASTASES

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The object of the study is the archival operating material of colon resection with adenocarcinoma. An immunohistochemical stain of histological slides with antibody to NRP1, followed by a morphometric evaluation, was used. We analyzed the relationship between the NRP1 expression and the hematogenous spread of the tumor, its significance for prognosis of the disease was determined. The NRP1 expression level doesn't depend on the hematogenous spread of the colon adenocarcinoma and can't be used as an independent prognostic factor.

МИКРОБИОЛОГИЧЕСКИЙ СПЕКТР СОВРЕМЕННОЙ РАНЕВОЙ ИНФЕКЦИИ

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Введение. Несмотря на явные успехи в профилактике и лечении ряда хирургических заболеваний, широком внедрении эндоскопической техники и малоинвазивных вмешательств, разработке современных антибактериальных и антисептических препаратов, гнойно-септические осложнения не только продолжают встречаться в практике хирурга, но и не имеют существенной тенденции к снижению [1]. Возникновению тяжелых форм таких осложнений способствует старение населения, развитие иммунодефицитных состояний, увеличение пациентов с сахарным