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EXPRESSION OF MARKER KI-67 IN NEPHROBLASTOMAS IN CHILDREN

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Relevance

Over the past decades, oncology services have made great strides, we have witnessed unprecedented changes and significant advances in the treatment of malignant tumors both among adults and among children and adolescents.

The objectives of the study

Are to study and analyze the level of proliferative activity of Ki-67 in primary tumor tissue in childhood and adolescent patients with embryonal tumors (such as nephroblastoma), as well as in tumor tissue after chemotherapy treatment, to evaluate it as a prognostic factor.

Materials and methods of research

This study was conducted on tumor tissue samples before the start of special antitumor treatment and after the first stage - neoadjuvant polychemotherapy treatment. All patients included in the study were treated at the Russian National Research Medical Center for OiR in the Department of Pediatric Oncology from 2012 to 2022.

Research results and discussion

When assessing the level of proliferative activity of Ki-67 in nephroblastoma tumor tissue (n=82) before the start of special treatment and depending on the extent of the tumor process, it was revealed that with the extent of the tumor process, the level of T_3 Ki-67 was higher by 34.2% (53.0%±6.1%), in contrast to the level of Ki-67 at T_2 (44.5%±4.2%), an increase in the level of Ki-67 in tumor tissue in patients with metastatic lesions was also found lymph nodes (by 39%) and with distant metastasis (by 21.2%). It was reliably established that there was a decrease in the level of proliferative activity of Ki-67 in tumor tissue depending on the initial size of the tumor node after special treatment: at T_2 it was 16.02% ± 2.3% ($p = 0.0221$), and at T_3 was 42.5%±5.01% ($p=0.0015$). The presence of metastatic lesions of nearby lymph nodes had a lesser influence on the Ki-67

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expression level after treatment, which was 35.3% ± 4.1% (p = 0.0024) for N_0, 56.4% ± for N_1 6.42% (p=0.0021). The change in Ki-67 in the residual tumor tissue in the presence of distant metastatic lesions had multidirectional significance, where its level was 84.3% ± 6.2% (p = 0.0013), which is 25% higher than before the start of special treatment. treatment, when, in the absence of metastatic lesions, a decrease in the level of Ki-67 by 3 5% (20.22% ± 1.6% (p = 0.0019)) was noted. When assessing the level of proliferative activity of Ki-67 in tumor tissue represented by nephroblastoma , before the start of special treatment and depending on the prevalence of the tumor process, the following was revealed: with the prevalence of the tumor process T_3, the level was 52.5% ± 4.5%, which is lower than the level at T_2 (81.2% ± 7.7% (p = 0.0002)), by more than 40%, however, compared with the level at T_1 (42.4% ± 3.4%) the level T_3 had no significant differences and was lower than the level of T_2 by more than 30%.

Conclusion

As a result of the IHC study, we found that changes in the level of Ki-67 expression in nephroblastoma in the primary tumor tissue corresponded to the size of the tumor node, as well as the stage of the tumor process.

Thus, we confirmed the possibility of using Ki-67 in routine IHC studies as a direct marker characterizing the long-term prognosis of the tumor process.