

OUTCOME COMPARISON OF TREATMENT OF BRAIN METASTASES IN HYPOFRACTIONATION AND STAGED RADIOSURGERY

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Oncological diseases are among the most common diseases in the world, from which, according to The Global Cancer Observatory, more than 9.9 million people died in 2020. The characteristic features of cancer are rapid cell division, the ability to penetrate into surrounding tissues, as well as metastasize to other organs. Brain metastases occur in 20-40% of cancer patients [1]. The main methods of treatment are neurosurgical intervention, radiation therapy, and stereotactic radiosurgery is actively developing [2-3]. The advantage of radiosurgery is non-invasiveness, the effectiveness of exposure to foci and the low probability of radiation reactions after treatment. However, in patients with a tumor volume exceeding 3 centimeters in diameter, with radiosurgical doses (>18 Gy), the risk of post-radiation complications are subsequently high, therefore radiosurgical methods of hypofractionation and staged radiosurgery are increasingly used. The research included a group of patients (9 people) who underwent treatment by the method of trained radiosurgery and a group of patients (14 people) who underwent hypofractionation. The median age of patients at the time of the 1st PC session or HF was 56 years (range 37-82 years), the median KPS was 75% (range 50-90%). The study groups were dominated by patients with MGM breast cancer – 36% patients. Significantly less often the source of MGM was: lung cancer - 18% of patients, gastrointestinal cancer - 18% of patients, melanoma - 9% of patients, uterine cancer - 9% of patients, kidney and bladder cancer - 5% of patients. In a 1 case, the metastases were a manifestation of primary multiple cancer - 5%. The clinical study was conducted at the Leksell Gamma Knife Icon installation (Stockholm, Sweden). The summed dose was in the range from 16 to 30 Gy.

The purpose of our study was to study and compare the results of the use of hypofractionation methods and staged radiosurgery for brain metastases. Changes in the volume of tumors 1 month after treatment by hypofractionation or staged radiosurgery are shown in Figure 1.

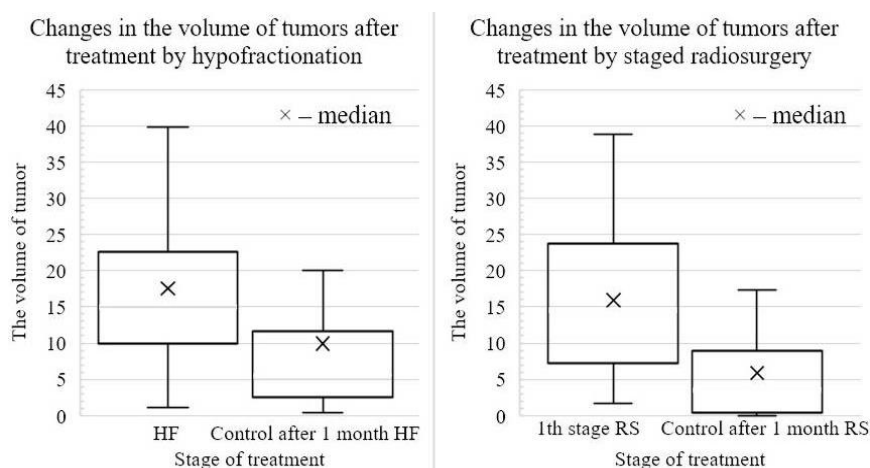


Fig.1. Changes in the volume of tumors after treatment by hypofractionation or staged radiosurgery.

The work shows that the trained radiosurgery provides satisfactory indicators of local control and is comparable to the hypofractionative method of treatment of large intracranial metastases in the absence of the possibility of surgical removal.

REFERENCES

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