

## **Abstract**

**Objective:** The main goal of this study was to collect and summarize all available data on both short term effects and late effects of posterior cranial fossa tumor treatment on children patients' motoric abilities and to find out any possible correlation between a decline in motoric abilities and the type of treatment they received.

Following previous studies on the topic, this study set a goal to design a testing procedure for areas in which decline of motoric abilities manifests the strongest and to put this procedure to test in the practical part of the study.

**Methods:** Based on a research into specialized literature, four main areas in which a decline of motoric abilities occurs in posterior cranial fossa tumor patients have been identified. Those are ataxia, balance, physical condition and functional activities. For Ataxia the SARA test was used, for physical condition the 6MWT test, for balance the PCTSIB test and for functional activities the BOT-2 test, respectively. Furthermore we observed the overall quality of life of selected patients through a PedsQL questionnaire. The group of patients selected for this experiment consisted of nine individuals who underwent posterior cranial fossa tumor treatment more than two years before.

**Results:** The SARA ( $p=0,020$ ) a 6MWT ( $p<0,0001$ ) tests proved a significant deterioration in taxis and physical condition compared to condition of individuals of same age and gender. The results of BOT-2 ( $p=0,007$ ) proved deterioration in functional activities as well. According to PCTSIB test results, there were no changes in balance. There was no difference in deterioration of motoric abilities between patients who underwent surgical removal of the tumor only, or those who combined surgical removal with chemotherapy and/or radiotherapy. As far as overall quality of life is concerned, there was no difference between the patients and the comparative group.

**Conclusion:** The theoretical part of the study describes possible effects of surgically removing a posterior cranial fossa tumor on motoric abilities, as well as those of chemotherapy and radiotherapy. In terms of late effects, clinical studies focus on patients' overall quality of life rather than possible decline in their motoric abilities. Within the practical part, the study proved that certain selected tests (BOT-2, 6MWT, SARA) are suitable for evaluating the decline of motoric abilities in patients who underwent oncological treatment of posterior cranial fossa tumor at least two years before. The 6MWT test has been used for the first time as a part of a clinical study in this context.