

## **SUMMARY**

Vestibular schwannoma surgery causes in majority of patients the unilateral peripheral or combined vestibular lesion due to surgical interruption of both branches of vestibular nerve. It manifests postoperatively with postural instability, vertigo, oscilopsia and even with vegetative symptoms. Central compensation, in which cerebellum plays dominant role, influences duration of the symptoms. Factors affecting compensation may be divided into several groups (general health status of a patient, the tumor itself, actual state of function of vestibular system, external factors induced by a therapist). Therapeutic aim is to induce compensatory mechanisms as soon as possible and to reduce overall duration of the compensation. The aim of this study is to consider predictive factors influencing central vestibular compensation and to influence the vestibular compensation itself.

Early operated vestibular rehabilitation is a basic procedure. It leads to faster recovery in majority of patients. Even with maximal effort the full compensation is not always achieved. It results in permanent deficit of vestibular function manifested with postural instability. However in some patients it is difficult to achieve full compensation despite maximum effort of a physiotherapist and that results in permanent functional deficit manifesting with postural instability. Chemical prehabitation with gentamicin is one of the options how to achieve this goal. Ototoxic antibiotic is installed intratympanically which causes reduction of vestibular function and helps to start compensatory mechanisms already in preoperative period. Reduction of duration of the whole compensatory process and reduction of intensity of vertigo should be achieved.

Patients with vestibular schwannoma (N=138), who underwent surgery, were included in the study. Quality of life, vertiginous problems and psychic profile were evaluated by questionnaires. Objective symptoms were evaluated by clinical examination and objective examination methods. Effect of preoperative chemically induced vestibular ablation was assessed. There wasn't proven definite influence on postoperative compensation but patients were significantly more resistant to 3D optokinetic stimulation. Examination of optokinetic nystagm revealed difference between prehabituated and control group. Results difference correlated also with psychic condition. On the other hand abnormal results of oculomotoric tests which proved central abnormalities do not affect process of compensation negatively. Detailed objective examination of vestibular function postoperatively helps to understand the process of compensation better and is beneficial for vestibular rehabilitation planning.