

NEW-ONSET HYPOPITUITARISM AFTER GAMMA KNIFE RADIOSURGERY FOR PITUITARY ADENOMAS

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Aim: The role of Gamma Knife radiosurgery (GKRS) for pituitary adenomas is long term control of tumor growth, as well as restoration of normal hormonal status regarding the hypersecreting hormonal axis. The aim of our study was to investigate the incidence of new-onset hypopituitarism after GKRS for pituitary adenomas on our series of patients.

Patients and methods: During a 11-year period (2003-2014) a total of 90 patients were treated in the Clinilal Medical Centre Zagreb Gamma Knife Unit for pituitary adenomas. 63 patients had complete pituitary hormone insufficiency before GKRS and were excluded from the study. We conducted a retrospective analysis of the remaining 27 patients, with a minimum follow-up of 6 months after radiosurgery. The primary aim was detection of new hormonal deficit, and secondary was control of tumor growth. 18 patients had non-functioning and 9 had secretory adenomas. Median age was 56 years (24-82, range). Median prescribed dose to adenoma was 20 Gy. Median tumor volume was 3,4 ccm (0,06-16.81 ccm, range). New onset hypopituitarism was defined as new deficit per hormonal axis (corticotroph, thyreotroph, gonadotroph) \geq 3 months after GKRS.

Results: New hypopituitarism after GKRS developed in 30 percent of our patients. None of the measured variables (age, gender, tumor function, tumor volume, prescription dose, dose to pituitary gland and stalk) showed statistical significance for development of hypopituitarism. There was no loss of control of tumor growth in the observed period.

Conclusion: In our cohort of patients 30% developed new-onset hormonal dysfunction after Gamma Knife radiosurgery. This incidence is concordant to previously published data. In the context of good local tumor control we feel this to be an acceptable finding.