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Uveal melanoma treatment by linear accelerator stereotactic radio-surgery

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Introduction: One step LINAC based stereotactic radio-surgery with a single dose 35.0Gy is one of treatment options to treat T1 to T3 stage posterior uveal melanoma and to preserve the eye globe. Multidisciplinary approach is necessary for indication, treatment and follow-up

Methods: Retrospective clinic-based study; clinical findings of patients with posterior uveal melanoma (choroid) in stage T1/T3 who underwent stereotactic radio-surgery (SRS) at LINAC in period 2001-2015 in Slovakia. Tumor stage, volume, maximum elevation, localization presence of secondary retinal detachment, general status, age, gender, the functional tests were taken into consideration. Immobilization of the affected eye was achieved by mechanical fixation to the stereotactic Leibinger frame. The stereotactic treatment planning scheme after fusion of CT and MRI was optimized according to the critical structures (lens, optic nerve, also lens and optic nerve at the contralateral side, chiasm). The best plan was applied for therapy at C LINAC accelerator. The planned therapeutic dose was 35.0Gy by 99 % of DVH (dose volume histogram).

Results: In group of 170 patients with posterior uveal melanoma treated with SRS, patient age ranged from 25 to 81 years with a median of 54 years. Median tumor volume at baseline was 0.6 cm³ (with range from 0.2 to 1.3 cm³). Median of maximal dose applied was 49.0Gy (range from 37.0 to 52.0Gy).

Conclusion: Follow up of the patient is necessary by an ophthalmologist to find out the changes in melanoma characteristics after SRS in long term interval after irradiation.

Biography

Alena Furdova has completed her PhD from Comenius University, Medical School in Bratislava, Slovak Republic. She is working as an Associate Professor at the Department of Ophthalmology, Comenius University, Medical School in Bratislava, Slovak Republic. She has published more than 50 papers in reputed journals and published two monographs on the theme of uveal melanoma.

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