

# Uveal melanoma

To report the factors predictive of radio-induced complications (i.e. radiation retinopathy [RR], radiation papillopathy [RP] and neovascular glaucoma [NVG]) in uveal melanoma (UM) patients undergoing gamma knife radiosurgery (GKR).

A longitudinal cohort study on patients with UM treated at the Ocular Oncology Service, San Raffaele Scientific Institute, Milan, between June 1994 and November 2018. Data were retrospectively reviewed. Rates of GKR-related complications were reported. Variables associated with each complication were investigated using multivariable Cox models and confirmed by logistic regression analysis. Hazard ratio (HR) and 95% confidence intervals (CI) were reported for significant associations.

One hundred ninety-four patients (99 males, 51%) were included, and 184 tumours were primarily located in the choroid (95%). Median follow-up was 57 months (range 6-286). Local control was achieved in 182 eyes (94%), and 152 eyes (78%) experienced at least one radiation-induced complication. Radiation retinopathy was documented in 67 eyes (35%) after a median of 23 months. Older age (HR = 0.97, 95% CI = 0.95-0.99, p = 0.02) had a protective effect for RR. Radiation papillopathy was diagnosed in 35 eyes (18%) after a median of 14 months after GKR. Macular or peripapillary location (HR = 3.06, 95% CI = 1.52-6.16, p = 0.002) was associated with increased risk of RP, while older age was protective (HR = 0.95, 95% CI = 0.93-0.98, p = 0.001). New-onset NVG was found in 53 eyes (27%), and median onset was 28 months. Tumour thickness (HR = 4.41, 95% CI = 2.23-8.72, p < 0.001) and peripapillary location (HR = 2.78, 95% CI = 1.46-5.27, p = 0.002) were the main risk factors associated with NVG.

Understanding factors predictive for radiation-related complications in patients undergoing GKR might help for better counseling and treatment planning <sup>1)</sup>.

<sup>1)</sup>

Cicinelli MV, Di Nicola M, Gigliotti CR, Battista M, Miserocchi E, Del Vecchio A, Mortini P, Bandello F, Modorati GM. Predictive factors of radio-induced complications in 194 eyes undergoing gamma knife radiosurgery for uveal melanoma. *Acta Ophthalmol.* 2021 Feb 26. doi: 10.1111/aos.14814. Epub ahead of print. PMID: 33638277.

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