EuroSciCon

25th Edition of World Congress of

OPHTHALMOLOGISTS

November 08-09, 2018
London, UK

Antonella del Vecchio et al., J Eye Cataract Surg 2018, Volume 4
DOI: 10.21767/2471-8300-C3-009

Predictive models for radio-induced effects after stereotactic radiosurgery (SRS) for uveal melanoma

Antonella del Vecchio, Gigliotti C R and **Modorati G**
San Raffaele Scientific Institute–Milan, Italy

Uveal melanoma (UM) is the most common primary intraocular malignant tumour in adults. The mortality is 40-50% in 15 years, mainly due to liver metastasis. In the recent decades, conservative techniques able to control the disease while preserving the eye have replaced, when possible, the enucleation. Gamma Knife stereotactic radiosurgery (GKRS) is one of the techniques to perform a conservative treatment of UM, as it can deliver very high doses to the target sparing in the same time to the surrounding tissue, creating a high dose gradient. Several studies have shown that GKRS allows the survival, local control and preservation of the eye. The therapeutic dose for this disease is very high (35 Gy to 50%) and it is necessary that the reference isodose is much larger than the tumour volume identified by the diagnostic exams. Several side effects are obviously associated to an important treatment from dosimetric point of view. Despite the deterioration of vision or complete blindness are often reported in the literature as important side effects and several authors argued that with the optimization of the treatment plan in terms of the prescription dose to the target and absorbed doses to critical structures, the visual function loss may be limited. Now-a-days, in the literature there are still no studies designed to investigate the dose-effect relationship of critical structures of interest with reference to adverse events. The aim of our study was to develop a predictive model for the radio-induced side effects in patients affected by uveal melanoma, treated with GKSR. The adverse effect which focuses the attention of the project is the partial or complete loss of the visual function. The aim is to find predictive dosimetric and/or clinical factors to obtain dose constraints to critical structures.

Recent Publications

1. G Sicignano, M Losa, A del Vecchio, G M Cattaneo, P Picozzi, A Bolognesi, P Mortini and R Calandrino (2012) Dosimetric factors associated with pituitary function after Gamma Knife Surgery (GKS) of pituitary adenomas. Radiotherapy & Oncology 104(1):119-124.
2. Gigliotti Carmen R, Modorati Giulio M, Di Nicola Maura, Fiorino Claudio, Perna Lucia A, Miserocchi Elisabetta, Franzin Alberto, Picozzi Piero, Bolognesi Angelo, Mortini Petro, del Vecchio Antonella and Calandrino Riccardo (2017) Predictors of radio induced visual impairment after radiosurgery for uveal melanoma. BJO Br J Ophthalmol 102(6)833–839.
3. Alberto Franzin, Pietro Panni, Giorgio Spatola, Antonella del Vecchio, Alberto L Gallotti, Carmen R Gigliotti, Andrea Cavalli, Carmine A Donofrio and Pietro Mortini (2016) Results of volume-staged fractionated Gamma Knife radiosurgery for large complex arteriovenous malformations: obliteration rates and clinical outcomes of an evolving treatment paradigm. Journal of Neurosurgery 125:104–113.
4. Filippo Gagliardi, Michele Bailo, Alfio Spina, Carmine A. Donofrio, Nicola Boari, Alberto Franzin, Arianna Fava, Antonella del Vecchio, Angelo Bolognesi and Pietro Mortini (2017) Gamma knife radiosurgery for low-grade gliomas: clinical results at long-term follow-up of tumor control and patients' quality of life. World Neurosurgery 101:540-553.
5. Mariaconcetta Longo, Elisabetta Genovese, Salvatore Donatiello, Bartolomeo Cassano, Teresa Insero, Mauro Campoleoni, Antonella del Vecchio, Andrea Magistrelli, Paolo Tomà and Vittorio Cannatà (2018) Quantification of scatter radiation from radiographic procedures in a neonatal intensive care unit. Pediatric Radiology 48(5):715-721.

Biography

Antonella del Vecchio is a Medical Physicist. She has a long expertise in Imaging, Radioprotection and Gamma Knife Stereotactic Radiosurgery. She is the PI of a research program in collaboration with the Oncological Ophthalmology Department of her Institute, to understand how to optimize the treatment of the uveal melanoma from 2015. Her new approach to the problem allows the team to understand not only the best irradiation technique by using gamma rays, but also try how to reduce the late effects and how to predict them by using a simple score.

delvecchio.antonella@hsr.it