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MICROPULSE TRANSSCLERAL CYCLOPHOTOCOAGULATION: STEP BY STEPRita Basto¹, Joana Roque¹, Ana Sofia Lopes¹, Fernando T. Vaz¹¹Hospital Professor Doutor Fernando Fonseca, Ophthalmology, Lisbon, Portugal

Purpose: The cyclophotocoagulation method is used to reduce intraocular pressure (IOP), by altering the ciliary body function of producing aqueous humour (AH). With the advent of Micropulse transscleral Cyclophotocoagulation (MPTSCPC) it is possible to minimize the complications' rate, because it employs a fractionated continuous wave diode laser which targets melanin in a non-destructive way in ciliary body tissues. The main purpose of this article is to describe and illustrate the procedure and demonstrate the results from 1 year of treatment with MPTSCPC.

Methods: A retrospective review of glaucoma patients submitted to MPTSCPC from January 2018 to June 2019. Medical records were consulted to obtain all data. Data analysis was conducted by IBM-SPSS Statistics 26.0.

Results: In our centre, MPTSCPC is performed with MicroPulse P3[®] probe, with predefined parameters: power of 2000 mW, 31.3% duty factor (micropulses with 0.5 ms on and 1.1 ms off time) and total treatment duration of 160 seconds. Adjacent to limbus, the probe is slid for 80 seconds in an arc motion over the superior hemisphere and the same is repeated for the inferior hemisphere. The test sample contained thirty-eight eyes. Successful reduction in IOP (> 20% and PIO ≤ 21 mmHg) at week 1 was achieved in all cases except one (97.4%). The percentage of IOP reduction was 43.4 ± 16.2% (8.9% - 70.6%). Success rate, despite always good, decreased progressively to 84.2% at month 1 and 3 and to 81.6% at month 6. The procedure was repeated in 7 cases and target IOP was achieved in five of them. There were no records of serious complications. Some cases described subconjunctival haemorrhage or light pain post-procedure, with good response to oral analgesics.

Conclusions: MPTSCPC is an efficient and safe strategy to reduce IOP and can be used in all spectrum of glaucoma disease. The procedure is easily performed and can be repeated with good results. We consider necessary a larger patient sample and longer follow-up period to better understand the real impact of MPTSCPC in glaucoma treatment.