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Autofluorescence images analysis after macular grid in diabetic maculopathy oedema

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Purpose: To compare autofluorescence images in patients treated with argon laser (532 nm) in all kind of diabetic macular edema using modified Early Treatment Diabetic Retinopathy Study grid laser technique (ETDRS) in contrast to subthreshold grid photocoagulation technique (MMG).

Design: Single-center, prospective, comparative, randomized, consecutive case series.

Methods: Six patients with diabetic macular oedema with visual acuity worse than 20/200 were randomized. Ophthalmic examinations were performed: best correct visual acuity, anterior biomicroscopy, intraocular pressure, ophthalmoscopy using 20D and 78 D lens, autofluorescence using HRA II and retina thickness volume using optical coherence tomography (OCT). All the exams were performed at baseline, 1, 2, 3, 4 and 6 months. The eyes were divided in two groups ETDRS group normal grid laser technique (spot 50 micras, expose time 0.1s, 0.100 microjoules power) and MMG group subthreshold grid photocoagulation (spot 50 micras, expose time 0.02 to 0.05s, 0.080 microjoules power) in the retinal macula oedema area. The photocoagulation techniques were performed using Ophthalas 532 Eyelite photocoagulator by Alcon Laboratories and Mainster focal/grid laser lens by Ocular Instruments. Patients with previous treatment should be waiting at least 3 months to be included in this study.

Results: Four patients received subthreshold MMG argon laser spots and modified ETDRS was done in two patients. The mean age was 67 years; there was only focal macular oedema. Hiperfluorescence was still found after 3 months in the two groups. Retinal OCT thickness increased in two patients underwent MMG and one of two patients of the ETDRS group. One patient of the MMG group remained retinal thickness after 01 month. In two patients retinal thickness was not available due short-term follow-up.

Conclusions: Hiperfluorescence images were still found in the two techniques

after 3 months and OCT showed the efficacy of the treatment. These results should be confirmed in larger and long-term exams.