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OCTA FINDINGS IN MIGRAINE PATIENTS WITH AND WITHOUT AURA

Oral

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Purpose:

The aim of this study is to evaluate the microvasculature of the macula and the optic nerve in patients affected by migraine with aura (MA) and without aura (MO) by optical coherence tomography angiography (OCTA), comparing the findings with healthy controls (HC).

Methods:

We collected data from ocular and orthotic examinations, including eye motility, intraocular pressure measurement, best-corrected visual acuity (BCVA) measurement, objective refraction measurement, fundus examination, macular and optic disk OCTA examination. All subjects were imaged with Solix Fullrange OCT. The following OCTA parameters were recorded: macular vessel density (VD), inside disc VD, peripapillary VD, peripapillary thickness, disc whole image VD, fovea choriocapillaris VD, fovea VD, parafovea VD, fovea thickness, parafovea thickness, macular Full Retinal Thickness, measured from ILM to retinal pigment epithelium and foveal avascular zone (FAZ) parameters. Clinical and demographical data about migraine patients were collected by a neurologist.

Results:

We included 56 eyes from 28 patients with a diagnosis of MO, 32 eyes from 16 patients with a diagnosis of MA, and 32 eyes from 16 healthy control subjects. The FAZ area was 0.230 ± 0.099 mm² in the MO group, 0.248 ± 0.091 mm² in the MA group and 0.184 ± 0.061 mm² in the control group. The FAZ area was significantly larger in the MA group than in the HC group ($p=0.007$). The foveal choriocapillaris VD was significantly lower in MA patients ($63.6 \pm 2.49\%$) when compared with MO patients ($65.27 \pm 3.29\%$) ($p=0.02$).

Conclusions:

An initial impairment of retinal microcirculation can be detected in patients with MA. The study of choroid circulation may early reveal microvascular damage in patients with migraine. OCTA is a useful non-invasive screening tool for the detection of microcirculatory disturbance in patients with migraine.