Multiple Sclerosis

USE OF OPTICAL COHERENCE TOMOGRAPHY ANGIOGRAPHY IN PATIENTS WITH MULTIPLE SCLEROSIS USING

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Introduction

New imaging methods are available to quantify retinal vascular density in neurodegenerative and inflammatory diseases such as optical coherence tomography angiography (OCTA). Objective: To investigate vascular changes such as vessel density in macular and papillary regions detected by optical coherence tomography angiography (OCT-A) in subjects with multiple sclerosis (MS) with and without optic neuritis, Methods Twenty-eight MS patients clinically stable within the last six months and with a follow-up of more than six months were examined. A complete ophthalmological study was carried out, assessing both visual function and retinal microvasculature using the OCTA Heidelberg Spectralis device. We compared patients with and without optic neuritis. Results 56 eyes were examinated, 18 had optic neuritis in the past and 38 had no previous optic neuritis. The mean vessel thickness in macula in patients with previous optic neuritis was clearly lower (230.33µ±22.29µ) than in patients without previous optic neuritis (250.47µ±25.18µ) (p-value=0.007) (Fig.1 y 2). All sectors except the temporal quadrant and the nasal and lower outer sectors are significantly reduced. While the macular vessel volume also showed differences in patients with previous optic neuritis (2.16µ ± 0.17µ) and without previous optic neuritis (2.27µ ± 0.18µ) (p-value=0.015). All sectors are significantly reduced except the lower outer sector. Conclusion MS patients with optic neuritis have significant retinal vascular loss compared to those without previous neuritis. Quantifying retinal vessel density may represent a new early biomarker for MS.