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THE RELEVANCE OF OCT ANGIOGRAPHY IN THE EARLY DIAGNOSIS OF PRIMARY OPEN-ANGLE GLAUCOMA

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To assess the relevance of OCT Angiography (OCTA) in evaluating peripapillary microvascular changes in patients with ocular hypertension and to investigate whether OCTA could serve as a potential biomarker for early glaucomatous damage.

This cross-sectional observational study included a group of patients with ocular hypertension (n=35 eyes) and an age-matched control group (n=29 eyes). All participants underwent a comprehensive ophthalmological evaluation, visual field assessment, and structural OCT of the optic disc. To examine peripapillary vascular density, two parameters were measured via OCTA: the flow index (FI) and vascular perfusion density (VPD).

The mean VPD was significantly lower in the ocular hypertension group compared to the control group (p=0.0235). Regarding FI, the mean value was lower in the ocular hypertension group compared to controls, although this difference was not statistically significant, but approached significance (p=0.0627). Statistically significant differences were observed in the inferior (p=0.0200), nasal (p=0.0204), and temporal quadrants (p=0.0239). Additionally, the diagnostic capability of OCTA in detecting early vascular changes was evaluated using ROC curve analysis. The FI in the inferior quadrant demonstrated the highest diagnostic capability (AUC = 0.670, p=0.015) and showed the highest sensitivity at 80% specificity (54%).

This study supports the notion that vascular density changes may indeed precede structural and functional decline, suggesting that these alterations may be valuable in the early diagnosis and monitoring of glaucoma.