Retinal nerve fiber layer thickness in refractory chronic migraine patients

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Background:
Thinning of the retinal nerve fiber layer (RNFL) thickness has been documented by optical coherence tomography (OCT) in a few studies in migraine patients. Some studies reporting reduction of the RNFL thickness put forward the hypothesis of retinal hypoperfusion. There is still a lack of studies evaluating RNFL thickness in chronic migraine patients.

Aim:
To evaluate by OCT the RNFL thickness in chronic migraine patients compared to control subjects.

Methods:
In a prospective study, we evaluated RNFL thickness by OCT in a series of 28 patients with refractory chronic migraine. All subjects underwent average and single sectors (temporal, superior, nasal and inferior) RNFL thickness measurements by OCT (StratusOCT, software version 4.0.1; Carl Zeiss Meditec Inc, Dublin, CA, USA). Chronic migraine patients were compared with age and gender-matched controls. For both groups we used a randomly selected eye for further statistical analysis. The Student’s t test has been used to compare OCT values between migraine and control groups (p value < 0.05).

Results:
- 28 patients with refractory chronic migraine were enrolled (21 F, 7 M; mean age 50.1 ± 10.8 years; range 23–67 years) and compared to 43 sex and age matched controls (32 F, 11 M; mean age 49.6 ± 12.1 years; range 23-68 years).
- The RNFL average thickness did not significantly differ in both groups and did not significantly differ between patients and controls (97.4 ± 8.4 µm in migraine patients vs 99.5 ± 13.0 µm in controls, p=0.37).
- Moreover, there was no significant difference in the RNFL thickness in any of the optic nerve quadrants analyzed.

Conclusions:
- In our series of refractory chronic migraine patients, we failed to detect differences in the RNFL thickness between patients and controls.
- Our results are similar to those reported in a study using scanning laser polarimetry which failed to detect significant RNFL thinning in migraine patients.
- A larger number of patients is needed to confirm these findings.

References: