

Abstract 169

DIURNAL CHANGES OF MACULAR ANATOMY AND SENSITIVITY IN X-LINKED JUVENILE RETINOSCHISIS

Oral

Mautone L.*, Yevgeniya A., Spitzer M.S., Dulz S.

Ophthalmology Department, University Medical Center Hamburg-Eppendorf ~ Hamburg ~ Germany

Purpose:

Macular schisis is one of the main features of x-linked juvenile retinoschisis (XLRS). Our aim is to investigate anatomical and functional changes of the macular thickness and sensitivity during course of the day.

Methods:

In this single-center, prospective cross-sectional observational cohort study, patients with genetically verified retinoschisin-1 gene mutation and the classic XLRS phenotype were enrolled. Visual acuity testing with Early Treatment Diabetic Retinopathy Study charts, spectral domain optical coherence tomography (OCT) and microperimetry (MP) were performed twice a day, respectively at 9 am and 4 pm. Central retinal thickness (CRT) and macular volume (MV) were measured in order to assess morphology changes. Moreover, to test macular function average threshold (AT) and fixation stability (P1 and P2) were measured with a 4-2 strategy.

Results:

16 eyes of 8 patients were enrolled. Overall mean BCVA and AT improved from 50.37 letters (SD \pm 14.69) to 53.12 letters (SD \pm 14.12) and the AT from 19.23 dB (SD \pm 2.87 dB) to 21.37 dB (SD \pm 2.83 dB) significantly ($p=0.026$ and $p=0.001$ respectively). No significant diurnal change of OCT anatomical measurements or fixation stability parameters was measured. The subanalysis of eyes with CRT > 400 μ m at baseline showed a mean CRT reduction of 35.6 μ m (SD \pm 14.98 μ m, $p=0.0001$) during the day.

Conclusions:

The herein presented case series was able to verify diurnal macular architectural and functional alteration in the course of the day. Subanalysis suggests that in particularly XLRS patients with prominent macular schisis alter anatomically during the day. These findings should be appreciated in upcoming clinical trial designs for XLRS.