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Research Article

“En-face” spectral-domain optical coherence tomography versus multifocal electroretinogram in hydroxychloroquine retinopathy screening.

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Abstract

Introduction:

The performance of “en-face” optical coherence tomography (OCT) in screening for chloroquine (CQ) or hydroxychloroquine (HCQ) retinopathy has not been largely explored. The aim of this study was to determine the concordance of “en-face” OCT with multifocal electroretinography (mfERG) in screening for CQ/HCQ retinopathy.

Methods:

This is a prospective cohort study conducted at the Rothschild Foundation Hospital – Paris between August 2016 and February 2021. Patients taking hydroxychloroquine were followed up over 2 consecutive years and received an “en-face” OCT and a mfERG on each visit.

Results:

A total of 91 patients (182 eyes) were analyzed. mfERG and “en-face” OCT were concordant in 147 eyes (86.3%). Cohen’s Kappa coefficient for concordance between mfERG and “en-face” OCT was considered weak with a value 0.61 (95% CI: 0.50-0.72). The sensitivity and specificity of “en-face” OCT are 70% (95% CI: 59-79%) and 91% (95% CI: 83-96%) respectively, relatively to mfERG. Proportion of abnormal R2/R5 and

R3/R5 ratios did not differ between patients with normal and abnormal “en-face” OCT (p=0.2).

Discussion/Conclusion:

“En-face” OCT and mfERG have low concordance and cannot be used interchangeably as each investigation evaluates a different facet of CQ/HCQ retinopathy. “En-face” OCT could be used as a complement in screening for CQ/HCQ retinal toxicity if the anomalies detected on “en-face” OCT are confirmed by B-scan OCT sections.

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