Evaluation of RETeval portable electroretinogram in patients with birdshot chorioretinopathy

Purpose: Birdshot chorioretinopathy (BCR) is a rare form of chronic, bilateral, posterior uveitis with a distinctive phenotype, and a strong association with HLA?A29. Diagnosis and treatment is frequently delayed, and management involves aggressive long term systemic and local immunosuppressive therapy to minimise visual loss. ERG testing is critical for making the diagnosis and following the response to treatment. The purpose of this study was firstly to determine the capability of a handheld RETeval electroretinogram (ERG) for detecting disease activity in birdshot chorioretinopathy (BCR) in comparison with conventional ERG.

Method: This retrospective study included eleven patients with an established diagnosis of BCR who had undergone standard clinical and RETeval ERG evaluation. Five control participants underwent RETeval ERG to establish standard values for comparison.

Results: The RETeval 30?Hz flicker amplitude and implicit time was positively associated with conventional ERG. There was a statistically significant difference between the RETeval 30?Hz flicker amplitude and implicit time in patients with BCR compared to controls. The ERG parameters that were significantly correlated with BCVA were: photopic bright flash (LA3.0) a? and b?wave amplitudes, conventional photopic 30?Hz flicker implicit time, RETeval 30?Hz flicker implicit time, and 30° field pattern ERG N95 amplitude.

Conclusion: This is the first study to evaluate RETeval 30?Hz flicker electroretinography in a cohort of BCR patients. Our findings indicate that the RETeval device has the potential to be used to screen for BCR disease activity and monitor treatment response where conventional ERG systems are not available.

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