

37TH CONGRESS OF THE ESCRS
PAVILION 7, PARIS EXPO, PORTE DE VERSAILLES
14 - 18 SEPTEMBER 2019

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Evaluation of the efficacy of transcorneal electric stimulation therapy in retinitis pigmentosa patients with electrophysiological and structural tests

Poster Details

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Abstract Details

Purpose:

Transcorneal electrical stimulation(TcES); is designed to assess the safety and efficacy of electrophysiological, structural and psychophysical tests in patients with retinitis pigmentosa (RP).

Setting:

RP is a group of inherited disorders characterized by progressive peripheral vision loss and night vision difficulties (nyctalopia) that can lead to central vision loss. TcES has been published positive effects on patients with RP, ischemic optic neuropathy, traumatic optic neuropathy and retinal artery occlusions with insignificant complications.

Methods:

Thirty four eyes of 17 patients who were diagnosed with retinitis pigmentosa were included in the study. Initial examination included best corrected visual acuity(BCVA) with decimal notation and visual field(VF) test. Central macular thickness(CMT), retinal nerve fiber layer thickness (RNLF) and choroidal thickness(CT) were measured with using Cirrus optical coherens tomography(OCT). The patients were tested by Metrovision brand monpack model visual electrophysiology device for pattern visual evoked potential(pVEP) and flash electroretinogram(fERG) tests. Patients were seen 12 times during 3 months: initial visit for screening and weekly visits for TcES. The results of pre and post TcES therapy were compared.

Results:

Patient's baseline BCVA was $0,34 \pm 0,22$. The increase in the last visit BCVA ($p < 0,001$). The difference between CMT, RNLF and CT pre and post TcES therapy were not statistically significant ($p > 0,05$). The mean latencies of the 120' pattern p100 waves that patients could see were shortened and statistically significant ($p < 0,05$). The peaks amplitudes of the 120' pattern p100 waves that patients could see were increased but not statistically significant ($p > 0,05$). There was no statistically significant difference in the scotopic b-wave max kon-rod amplitude and kon amplitude after TcES therapy.

Conclusions:

This study shows that the safety of TcES as a stimulator device in our patient group and the effect on this group have a significant increase in visual acuity and shortening of p100 latency in pVEP test during 3 months follow up.

Financial Disclosure:

... research is funded, fully or partially, by a company producing, developing or supplying the product or procedure presented