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MonPackONE and multiple sclerosis

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Purpose

To assess visual function in patients with Multiple Sclerosis (MS) using the new device MonPack One visual stimulator (Metrovision, France).

Methods

Forty eight eyes from relapsing-remiting MS patients and forty six eyes from controls were included. Disease duration, ophthalmic outbreaks and type of treatment were assessed. All patients underwent visual function evaluation using MonPack One visual stimulator. The protocol consisted of psychophysical tests (low contrast 10% ETDRS visual acuity -VA-, contrast sensitivity [1, 2, 5, 10, 20 cycles per degree], FAST 30 static visual field, and electrophysiological testing (pattern electroretinography-ERG-, multifocal reversal visual evoked potential -VEP-))

Results

A statistically significant decrease was observed in the MS group compared with controls in low contrast 10% VA (0.08 ± 0.27 vs. 0.43 ± 0.50 , respectively), well-read number letters (39.70 ± 5.58 vs. 31.90 ± 8.20), low (0.5 and 1 cpd; $p < 0.05$) and medium spatial frequencies (2 and 5 cpd; $p < 0.05$) in contrast sensitivity, in all visual field parameters and central ($1,556.81 \pm 1,120.97$ vs. 798.80 ± 585.58 nV/deg²) inferior nasal (798.50 ± 390.14 vs. 523.90 ± 262.71) and inferior temporal (830.40 ± 380.09 vs. 677.55 ± 730.19) sectors of the multifocal VEP. No differences were found in pattern ERG.

Conclusions

MonPack One visual stimulator allowed the study of visual function in a controlled and protocolized way. MonPack One detected low contrast visual acuity, contrast sensibility, visual field, and multifocal visual evoked potential alterations in patients with MS.