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Category: Treatments

Abstract Title
Fingolimod may prevent axonal degeneration at retinal level in multiple sclerosis when compared to first-line injectable treatments.

Abstract Short Title
FTY may prevent retinal axonal degeneration in MS.

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Background and Aims: optical coherence tomography-OCT is used in multiple sclerosis-MS to measure retinal nerve fiber layer-RNFL and ganglion cell-inner plexiform layer (GCL-IPL) thickness as a marker of axonal-neuronal loss. A recent study suggested a protective role for Natalizumab on neuroretinal damage; we explored the role of Fingolimod-FTY in this field.
Methods: 90 patients with MS, 45 receiving FTY (mean treatment duration 2.59±1.2years) and 45 (mean treatment duration 4.19±3.6years) Interferon-IFN (n.24) or Glatiramer acetate-GA (n.21), underwent OCT with RNFL and GCL-IPL thickness measurement, with 1 year follow-up.
Results: no significant differences were found comparing IFN *vs* GA subgroups, so they were combined (IFN-GA). Over one year, patients under FTY had significantly lower RNFL thinning *vs* IFN-GA group (0.00±0.16µm vs -0.83±0.23µm; p=0.003), despite significantly lower baseline values (81.6±15.2µm *vs* 88.6±13.9µm; p=0.025). GCL-IPL thickness did not significantly differ between the two groups, both at baseline (IFN-GA 64.2±8.6µm *vs* FTY 61.1±9.7µm; p=0.097) and over time (-0.44±1.1µm for IFN-GA *vs* -0.09±1.3µm for FTY; p=0.303). Similar rates of disease activity (new relapses or new T2/Gd enhancing lesion at brain MRI) were found both in the year before baseline (24.3% for IFN-GA *vs* 28.8% for FTY; p=0.642) and during follow-up (15.3% for IFN-GA *vs* 13.3% for FTY; p=0.790).
Conclusions: these results suggest a neuroprotective role for FTY at the retinal level, independently from clinical and neuroradiological evidence of disease activity. Although a longer follow-up is warranted to confirm these observations, our findings appear consistent with experiences reporting reduced brain volume loss in patients receiving FTY.

Disclosures: part of this work was supported by NOVARTIS AG - Basel – Switzerland