

Could be related the RNFL thinning as a predictive for multiple sclerosis severity?

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**Background:** There is an actual need to develop a useful tool to predict a worse prognosis at an initial stage of MS, we suggest the use of optical coherence tomography (OCT) as a prognostic marker related to its severity

**Objective:** To determine if RNFL thinning is predictive of MS severity at 10 years of evolution and its associated factors.

**Methods:** Longitudinal study of RNFL analysis by OCT, it was carried out in patients with RR MS at the beginning of their recruitment in a tertiary hospital in Mexico as part of their early stratification with a 10-year follow-up

**Results:** We enrolled 75 patients with baseline characteristics of which only 54 met the 10-year follow-up criteria of which 55% were female, 19 had low efficacy disease modifying therapy (DMT) and 35 had high efficacy therapy in the last year, smokers at study entry were 57, 19 with past medical history of optic neuritis (ON), with mean age of 37.9±11.8, mean BMI of 25.8 ± 3.8, mean RFL nm of 86.27 ± 10.6, median progression index of 0.22(0.13-0.42), with median disease evolution at study entry of 5.5 years (2-11). In the bivariate analysis, we found a difference in the mean RNFL thickness in overweight and obese patients. (8.36 ± 1.70 vs 10.65±1.97 nm, considering that being overweight increases an OR 2 for risk of thickness less than 85um (95% CI 1.2-3.2, p = 0.001). There was no statistically significant difference regarding gender (p=0.42), in patients with EDSS > 3.5 (p= 0.24), smoking (p= 0.3), in patients with a history of ON (p=0.027), patients with less than 5 years of evolution (p=0.67) and in patients using high efficacy therapy (p=0.82)

**Conclusions:** OCT as a measure of initial stratification by itself is not a useful tool to predict the severity and future behavior of multiple sclerosis