

Long-term visual function effects of pan-retinal photocoagulation in diabetic retinopathy

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Purpose: To characterize the visual function in patients with diabetic retinopathy submitted to pan-retinal photocoagulation and to relate the outcomes with clinical factors and treatment strategies.

Methods: Retrospective study including 113 eyes of 57 patients. Clinical data was obtained through the patient's clinical processes. Visual function was accessed by the study of the Humphrey Esterman Visual Field (HEVF, Humphrey analyzer3®), the contrast sensitivity function (CSF, Metrovision-MonPack3®) and the analysis of light scattering in the retina (HD Analyzer®). Spectral domain-optical coherence tomography (Heidelberg®) was made in all patients.

Results: 37 men and 20 women, aged 62,2 years were evaluated. 29 were type 1 and 28 were type 2 diabetics and the average disease evolution time was 29,7 years.

Average best corrected visual acuity (BCVA) was 148/200 (0.13 logMAR) and mean objective scatter index (OSI) was 2,95. BCVA and OSI were significantly worse in patients with cataracts ($p=0,000$; $p=0,000$) and no significant differences were found between those who received macular laser and the others ($p=0,366$; $p=0,56$)

Mean HEVF SCORE was 84.6%. The "confluent" photocoagulation pattern had a significantly better SCORE than the "very confluent" one ($p=0,000$), YAGII laser achieve a significantly better SCORE than Argon laser ($p=0,000$). Mean CSF (2-5cpd) was 19,42 and 14,11 in photopic and mesopic conditions respectively. Photopic CSF was significantly better in the "confluent" than in the "very confluent" pattern but there was no statistically significant difference in mesopic conditions ($p= 0.003$; $p=0.075$)

According Portuguese law, 77,1% patients have driving license visual field requirements.

Conclusions: Laser pan-photocoagulation is an effective long-term treatment for the stabilization of diabetic retinopathy. Despite the aggression to the retinal tissue, the results of visual function are good and compatible with activities such as driving in most cases.