Loss of vision due to Age-Related Maculopathy (ARM) is an irreversible process, therefore it needs an early diagnosis of the pathology. Up to now, in-depth research has been made in the ARM treatment area, although not in the initial stages diagnosis area. To detect advanced ARM condition is more or less easy, however it is difficult to detect an early ARM condition. This has become worse due to the lack of a standard initial stages ARM classification, ratified by the scientific community.

The purpose is to discriminate between different moderate retinopathies according to the Clinical Age-Related Maculopathy Staging System (CARMS) by using several retinographies to analyze the CARMS reliability in an inter-observer’s diagnosis.

Methods

55 retinographies were classified by using CARMS system, which categorizes the images depending on Drusen presence or absence, retinal pigment epithelium irregularities, geographic atrophy, pigment epithelium detachment and choroidal neovascularisation.

The method followed consisted of 2 different sequences with each of the 3 evaluated systems, made by 2 experts in a blind, independent way. The goal of the doubled-classification-method, with changing, non-randomised order, was to reject the influence of the evaluation of the previous image in the following one (Velo’s effect).

Inter-observer’s reliability analysis was the following:

- Drusen’s concordance obtained was 87.27%. The expected values were 59.50% and 60.31%. Kappa index was 0.6802.
- Pigmentation concordance obtained was 76.36%. The expected values were 59.50% and 54.46%. Kappa index was 0.4814.
- CARM’s concordance obtained was 81.89%. The expected values were 59.50% and 57.39%. Kappa index was 0.5743.

The reliability measured by Kappa index followed the rule: 0.80-1.00 (Excellent), 0.60-0.80 (Good), y 0.40-0.60 (Moderate), 0.20-0.40 (Low), <0.20 (Bad).

Conclusions

CARM’s classification is a good tool to differentiate between different degrees of minor and medium retinopathies, although it is not a very accurate tool to check, in longitudinal research, minimal progress of the pathology.

Kappa indexes obtained for the inter-observer analysis showed moderate concordance for the inter-observer analysis, except in the Drusen case, dichotomy’s variable, which presented good reliability. A higher discrepancy in the first retinas, which were classified, was observed. This means that a previous training is necessary, must be enhanced. The worst behaviour of the Pigmentation parameter must be enhanced with regard to the Drusen parameter, thus the global reliability falls.

Future research will design new classification criteria that allows a more reliable categorizing of early ARM.