

Longitudinal multimodal functional macular analysis after half-dose photodynamic therapy for central serous chorioretinopathy

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Highlights

- Half-dose photodynamic therapy (HD-PDT) has been widely used for central serous chorioretinopathy (CSC) with good anatomical results, however, long-term functional outcomes after this treatment remain uncertain.
- Our multimodal longitudinal analysis of CSC patients after HD-PDT shows that the visual acuity and central macular thickness significant improvement persist in the long run.
- However, this sustained improvement is not paired by a sustained improvement in macular sensitivity and electrical response, which seems to decline after the first 12 to 24 months.
- This long-term functional deterioration might result from the disease itself and not directly from the treatment.

Abstract

Background

Half-dose photodynamic therapy (HD-PDT) has been widely used for central serous chorioretinopathy (CSC) with good anatomical results. However, long-term functional outcomes after this treatment remain uncertain. This study aimed a longitudinal multimodal macular assessment, correlating functional and anatomical outcomes.

Methods

This is a retrospective study performed in a tertiary referral center including 111 eyes from 95 CSC patients. Data on best corrected visual acuity (BCVA), central macular thickness (CMT), central retinal sensitivity (CRS) using microperimetry (MP) and multifocal electroretinography (mfERG) at baseline and 3, 6, 12, 18, 24, 36, 48 and 60 months after treatment were registered. A correlation analysis was performed.

Results

Mean follow-up was 34.5 ± 26.3 months. A significant improvement in BCVA and CMT was registered in all the visits. CRS significantly improved until 24 months ($p < 0.001$ at 12 months, $p < 0.05$ at 24 months), worsening afterwards. The mfERG amplitude of N1 and P1 waves significantly improved in the first 12 months, aggravating afterwards. The implicit time improved until 24 months, deteriorating after 48 months. This long-term decline was also described in some inactive untreated fellow eyes

Conclusions

A multimodal longitudinal analysis of CSC patients after HD-PDT shows that, after the first 12 to 24 months, the significant sustained improvement in BCVA and CMT is not paired by a sustained improvement in macular sensitivity or electrical response. This long-term functional deterioration might result from the disease itself and not directly from the treatment .