New Lutein-based Dyes vs Standard Synthetic Dyes in Vitreoretinal Interface Surgery

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PURPOSE

To compare anatomic, functional, microperimetric and electrofunctional outcomes among patients affected by vitreoretinal interface-associated disorders undergoing vitrectomy + epiretinal membrane and/or internal limiting membrane peeling by using new lutein-based dyes or standard synthetic dyes.

MATERIALS AND METHODS

This is a randomized prospective comparative study. It was conducted on 30 eyes of 30 patients who underwent vitrectomy via pars plana + epiretinal membrane (ERM) and/or internal limiting membrane (ILM) peeling. They were divided into two groups:

Group 1: 12 patients affected by macular pucker and 3 patients affected by lamellar hole treated with lutein-based dyes,
Group 2: 12 patients affected by macular pucker, 2 patients affected by lamellar hole and 1 patient affected by macular hole treated with standard synthetic dyes.

Best corrected visual acuity (LogMAR), retinal sensitivity (dB), electroretinographic response recorded in ring 1, anatomic outcomes in terms of central subfield thickness (µm) and average RNFL thickness (µm), were recorded preoperatively, 15 days and 1 month postoperatively.

RESULTS

There were no statistically significant differences between the two groups at the beginning of the trial and at each considered time point in terms of anatomic, functional, microperimetric and electrofunctional parameters estimated during the follow up. Considering the efficacy of staining of the two different dyes, the Lutein based dye resulted more efficient in terms of distribution and detection of the ILM or ERM and this could be mediated by the increased density of those formulation.

CONCLUSION

Vitrectomy via pars plana + ERM and/or ILM peeling with the use of standard synthetic dyes or of new lutein-based dyes are techniques equally safe after a short time evaluation period after surgery. However, to state this outcome a longer follow up should be applied to demonstrate that there are no anatomical and functional changes into the retinal tissues of the patients who underwent to this kind of surgery. Regarding the efficacy of staining of the two different dyes, the Lutein based dye resulted more efficient in terms of distribution and detection of the ILM or ERM.

REFERENCES


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