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Quality of vision and contrast sensitivity with bilateral Acrysof Restor +3d IOL vs Lentis Mplus IOL. Comparison with new methodologies

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Purpose:
The purpose of this study is to compare different parameters of quality of vision - spatial contrast sensitivity (CS), chromatic vision and glare using a novel computerized psychophysical assessment method at photopic and mesopic conditions, in patients who undergone bilateral implantation of the AcrySof ReSTOR + 3D IOL versus Lentis Mplus IOL.

Setting:
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Methods:
In this prospective study 60 patients were included - group I (30 patients with bilateral ReSTOR + 3 IOL) and group II (30 patients with bilateral Lentis Mplus). All patients were evaluated (UCVA and BSCVA at distance, intermediate and near) first, 3rd and 6th month post-operative. CS was evaluated using the standard Pelli-Robson charts and using a novel computerized psychophysical assessment method Metrovision, that can measure the contrast threshold of perception of gratings with six different spatial frequencies (0.6 - 23.6), under different conditions: static (0 Hz)/dynamic (10Hz) and photopic (80-90 cd/m²)/mesopic (0.08 cd/m²). The chromatic sensitivity was assessed along protan, deutan and tritan confusion lines using the Modified Cambridge Colour Test. The glare was evaluated with the "Glare Test" - Metrovision. A questionnaire to evaluate the satisfaction of the patient was included.

Results:
There was no statistical significant difference in the mean distance UCVA and BCVA between groups along the 6 months follow-up period. Both Restor IOL and Lentis Mplus provided a good uncorrected near acuities, significant spectacle independence and patient satisfaction. Concerning the achromatic CS using the standard method (Pelli-Robson) there are no statistical significant difference between the 2 groups but using the new methods (Metrovision) we found a statistical significant difference at 3 month in intermediate special frequencies with a recovery at 6 months. The chromatic CS has alterations along the 3 months in both groups but a recovery at 6 months. Concerning the glare test both groups recovery the normal values 1 month after the surgery.

Conclusions:
The Restor multifocal IOL and Lentis Mplus provided a good range of vision and quality of vision parameters. Our quantitative computerized psychophysical approaches offer substantial advantages over previously used classical semi-quantitative tests. The use of precise, reproducible and accurate methodologies to obtain objective evaluation of quality of vision is mandatory in order to create surgical techniques which will eliminate post-refractive vision disturbances.

FINANCIAL DISCLOSURE?: No