

Abstract 93

REFRACTIVE ERROR AFTER COMBINED PHACO-VITRECTOMY: A MULTICENTRIC STUDY

Oral

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Purpose:

To study the post-operative refractive error (RE) of patients undergoing combined phaco-vitrectomy and to find out which intraocular lens (IOL)-power formula had the best refractive outcomes.

Methods:

In this retrospective multicentric study we compared the preoperative expected target with the postoperative RE of patients undergoing combined phaco-vitrectomy due to vitreomacular traction, macular pucker, full thickness macular hole or lamellar macular hole. A multinomial logistic regression was performed to compare the postoperative REs and the differences between expected and postoperative REs among the SRK-T, Olsen's and Holladay-2 formulas. The correlation between the difference in REs and IOL-power was also studied.

Results:

Sixty-seven eyes with a mean axial length of 23.73 ± 1.21 mm were included. Forty-two (63%), 14 (21%) and 11 (16%) eyes were implanted with an IOL that was calculated respectively with SRK-T, Olsen's and the Holladay-2 formula. The mean preoperative- and postoperative-REs were -0.16 ± 0.12 D and -0.48 ± 0.17 , respectively ($p=0.045$). SRK-T and Holladay-2 formulas led to a significant myopic shift whereas Olsen's caused a significant hyperopic error, independently from the IOL power.

Conclusions:

Independently from the IOL power, none of the analyzed formulas is precise at calculating the post-operative RE in patients undergoing combined phacovitrectomy.