

SUMMARY

Aim: We analysed two years results in patients with correction of moderate-to-high myopia or myopic astigmatism by implantation of posterior chamber phakic intraocular Implantable Collamer Lens (ICL).

Methods: To the retrospective study were included 63 eyes of 32 patients (3 men, 29 women), who underwent implantation of ICL between 2007 – 2016 in the outpatient Department of Ophthalmology clinic, University Hospital in Hradec Králové, to correction moderate-to-high myopia or myopic astigmatism. We assess uncorrected visual acuity (UCVA) and best spectacle-corrected visual acuity (BSCVA), subjective refraction, intraocular pressure (IOP), endothelial cell density (ECD) and the incidence of complications in the two years follow-up period.

Results: At the time of implantation the mean patient's age was $28,14 \pm 5,35$ years (range 21 to 36 years). The mean preoperative subjective refraction improved from $-7,8 \pm 2,7$ D sf (range -14 to -3,25 D sf) and $-0,65 \pm 0,8$ D cyl (range -3,25 to 0 D cyl) to $-0,01 \pm 0,1$ D sf (range -0,75 to 0 D sf) and $-0,05 \pm 0,16$ D cyl (range -0,55 až 0 D cyl). The mean ECD value was $3270,5 \pm 454,7$ cells/mm² (range 2155 to 4201 cells/mm²) compared to $2803,4 \pm 441,8$ cells/mm² (range 2079 to 4184 cells/mm²) at the end of our follow-up period. The percentage loss of ECD two years after the surgery was 8,57%. The mean preoperative value of IOP was $15,0 \pm 2,9$ mmHg (range 10 to 20 mmHg) and $15,2 \pm 2,5$ mmHg (range 10 to 20 mmHg) at the end of follow-up period. We observed the elevation of IOP over 21 mmHg 1 month postoperatively in 11 eyes. In 9 eyes was IOP until 35 mmHg ($27,7 \pm 3,74$, range 22 to 34 mmHg), in one case (both eyes of the same patient) over 50 mmHg. Postoperatively we observed following complications: IOP elevation (11 eyes), decentration of ICL with development of subcapsular opacity in the crystallin lens periphery (1 eye), pigment dispersion without elevation of IOP (1 eye) and incidence of optical phenomenon (4 patients). The explantation of ICL was indicated in one patient bilateral.

Conclusions: According to our experience is the correction of moderate-to-high myopia or myopic astigmatism by implantation of ICL an effective, relative safe and predictable method. It has an important place in the modern refractive surgery, especially in patients, who are not able to undergo the photorefractive corneal surgery to correct their refractive errors.

Key words: Implantable collamer lens, phakic intraocular lens, myopia, myopic astigmatism