

7. NEW PERSPECTIVES ON GLAUCOMA TREATMENT

Author: Raz Zvi Cohen

Scientific adviser: Maria Iacubitchii, University Assistant, Department of Ophthalmology, *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova.

Introduction. Glaucoma disease, the silent thief of sight, is a neurodegenerative disease, characterized by a progressive optic disc cupping, a loss of retinal ganglion cells and a visual field damage, representing as the second leading causes of irreversible blindness worldwide. Treatment and regular checkups can help slow or prevent vision loss, especially if catching the disease in early stages. Glaucoma is treated by lowering eye pressure (intraocular pressure) and regulating balance between aqueous formation and drainage system.

Aim of study. Investigation perspective points of views on glaucoma disease of standard surgical treatment vs XEN Gel stent.

Methods and materials. Data collection from published 51 abstracts and articles found on Pubmed for a period of 5 years (2017-2022) and the medical book Minimally Invasive Glaucoma Surgery – "Practical Guide", helped us to compare the changes in the anterior structure of the eye and IOP after trabeculectomy versus XEN Gel Stent implantation.

Results. Recently, the approach of glaucoma treatment became the gold standard focus on MIGS (minimally invasive glaucoma surgery). The XEN Gel Micro stent is a subconjunctival micro-invasive glaucoma surgical device developed to improve the predictability and safety profile of glaucoma surgical procedures. The stent is a hydrophilic tube composed of a porcine gel cross-linked with glutaraldehyde with good stability and biocompatibility with minimal tissue reaction that reduces the complications and the time of healing in the postoperative period. The baseline mean corneal endothelial cell density in the trabeculectomy group was representing a cell loss of 2.1% compared with XEN Gel Stent group [Ali Olgun, 2020]. Usually, the surgery is undergone combined XEN + cataract extraction (phacoemulsification) which has a better influence on IOP (intraocular pressure). The median IOP reduction was 17.7% [Cosme Lavin-Dapena, 2021] after XEN Gel Stent and a significant reduction in the number of ocular hypotensive drugs. Also, Xen reduces IOP and the number of medications in eyes with failed trabeculectomy [Ayesha Karimi, 2018]. The top priority of glaucoma treatment is to decrease the IOP and prevent obstruction drainage. Nowadays, MIGS surgical procedures manage the balance between aqueous formation and drainage, reduce IOP that shows promise for better safety and excellent results in glaucoma treatment. Trabeculectomy caused more endothelial cell damage than XEN Gel Stent implantation in the follow-up period. The device significantly reduced both IOP and the amount of ocular hypotensive medications while maintaining a good safety profile.

Conclusion. Xen Gel stent seems to be a viable, effective, and safe option for glaucoma surgery even in comparison with trabeculectomy. Anyway, it should be considered the type of glaucoma, patient profile and safety.