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Intraocular pressure measurements difference between re-usable and disposable tonometer in relation to the central corneal thickness and effect of cataract operation on corneal thickness

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Purpose: The purpose of this study was to evaluate the accuracy of the disposable applanation tonometer head as a potential substitute to the standard reusable applanation tonometer head for IOP measurements and to determine the influence of Central Corneal Thickness (CCT) on IOP measurements with these tonometer heads and determine effect of corneal incision on the post-operative CCT.

Methodology: The IOP of 30 post cataract surgery patients was measured with disposable and the standard reusable tonometer head after informed consent. Corneal thickness was recorded in operated and un-operated eye.

Results: The mean IOP using the reusable tonometer head in both eyes was 13.4±3.11 mmHg and with the disposable head was 13.11±3.18 mmHg with the mean difference of 0.29±0.08 mmHg. Disposable tonometer recorded higher IOP in patients with thicker cornea (0.1±0.2 mm Hg) than in patients with thinner cornea (0.4±0.3 mmHg) and lower in the normal CCT patients.

Conclusion: The disposable tonometer prism provides a reliable, effective and safe alternative to the reusable tonometer prism with the advantages of eliminating the need for chemical disinfection and the risk of cross infection.

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Switch to Aflibercept in diabetic macular edema patients unresponsive to anti-VEGF

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Introduction & Aim: The diabetic macular edema is the leading cause of blindness in working-age patients. The aim of this study was to evaluate the efficacy of aflibercept in patients with diabetic macular edema unresponsive to anti-VEGF.

Material & Methods: Retrospective chart review of patients with diabetic macular edema unresponsive to anti-VEGF switched to aflibercept with 3 months of follow up. All patients have had a minimum of 3 injections of anti-VEGF before switch. Changes in best correct visual acuity, central retinal thickness and frequency of injection were analyzed. Additionally, the percentage of subjects who had vision ≥ 20/40 (logMAR 0.3) and ≤ 20/200 (logMAR +1) were evaluated.

Results: A total of 32 eyes from 26 diabetic patients were included. The mean age was 65±10 years old and the majority was female (53%). The mean number of previous anti-VEGF injections was 5.03±2.19 and the mean number of aflibercept injections at the end of the study was 2.00±0.00. The central retinal thickness at baseline was 501.47±150.51 μm and 367.97±124.61 μm at 3 months follow up (P=0.000). The best correct visual acuity at baseline was 0.71±0.36 logMAR and 0.65±0.33 logMAR at the end of the follow up (P=0.037). At baseline 12.5% of patients had vision 20/40 or better comparing with 25% at 3rd month follow up. At baseline 28.13% of patients had vision 20/200 or inferior comparing with 15.63% at the end of the follow up. Approximately 63% of patients improved vision, 18.75% maintained vision and 18.75% loss vision at the end of the study. Further analysis did not show any correlation between central retinal thicknesses, best correct visual acuity and the number of prior anti-VEGF treatments.

Conclusions: Patients with diabetic macular edema unresponsive to previous multiple anti-VEGF injections demonstrate a significant anatomical and functional improvement with switch to aflibercept.

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