

Punctal size changes related to post phacoemulsification topical anti-inflammatory drugs: a comparative study using Anterior Segment Optical Coherence Tomography

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Purpose: To compare the short term effects of preserved prednisolone acetate to preserved nepafenac eye drops on punctum size.

Methods: The punctum size (inner diameter, outer diameter and height) as well as tear meniscus (height & area) were evaluated using AS-OCT in 50 eyes of 48 patients who were scheduled for phacoemulsification. Post operatively, eyes were randomized to receive either prednisolone acetate

(group A) or nepafenac eye drops (group B) for 3 weeks. Punctal size and tear meniscus were re-measured at 2 weeks, 1 month and 3 months post-operatively.

Results: Punctum size measurements showed no statistically significant differences between the 3rd month post-operative visit and the pre-operative evaluation in either group. P values for outer diameter, inner diameter and height in group A were 0.987, 0.795 and 0.140 while in group B they were 0.236, 0.183 and 0.661 respectively. There was no statistically significant difference between both groups (p-value: >0.05 for all the parameters). Tear meniscus height and area showed statistically significant increase in both groups compared to preoperative value at the 2nd postoperative visit (p-value = 0.046 and 0.019 in group A compared to 0.001 for both in group B).

Conclusions: Short term preserved prednisolone acetate and nepafenac eye drops have no effect on the lacrimal punctal size. Benzalkonium chloride has a short term effect on tear film stability observed as increased tear meniscus parameters on AS-OCT.