



## Consider Brinzolamide to prevent IOP Spikes after Cataract Surgery in Eyes with Glaucoma

### ***The Science behind the Tip***

IOP spikes, i.e. an IOP elevation after surgery compared to baseline, often occur in eyes with glaucoma<sup>1,2</sup>. IOP spikes may lead to further progression of glaucomatous damage<sup>3,6</sup>. Prior studies assessed the prophylactic effect of oral acetazolamide. In a recently published randomized trial eyes with medically well-controlled primary open-angle and pseudoexfoliative glaucoma which were scheduled for phacoemulsification were assigned to receive the following topical hypotensive medications immediately after surgery: (1) prostaglandin (travoprost 0.004%, Travatanz; Novartis Pharma K.K., Tokyo, Japan), (2) beta blocker (timolol maleate 0.5%, Timoptol; Santen Pharmaceutical, Tokyo, Japan), or (3) carbonic anhydrase inhibitor (brinzolamide, Azopt; Novartis Pharma K.K.)<sup>7</sup>. All antihypertensive topical medications were discontinued the day before surgery and one of the previous mentioned medications was applied immediately after surgery. Mean IOP increased significantly between 4 and 8 hours postoperatively and then decreased at 24 hours postoperatively. Mean IOP increased significantly between 4 and 8 hours postoperatively and then decreased at 24 hours postoperatively in all groups ( $P < .0001$ ). Mean IOP was significantly lower in the brinzolamide group. Given the results, topical brinzolamide may be beneficial to prevent IOP spikes in eyes with glaucoma after cataract surgery.

### ***References***

- 1) Levkovitch-Verbin H, Habet-Wilner Z, Burla N, Melamed S, Goldenfeld M, Bar-Sela SM, Sachs D. Intraocular pressure elevation within the first 24 hours after cataract surgery in patients with glaucoma or exfoliation syndrome. *Ophthalmology*. 2008 Jan;115(1):104-8. Epub 2007 Jun 11. PubMed PMID: 17561259.
- 2) Barak A, Desatnik H, Ma-Naim T, Ashkenasi I, Neufeld A, Melamed S. Early postoperative intraocular pressure pattern in glaucomatous and nonglaucomatous patients. *J Cataract Refract Surg*. 1996 Jun;22(5):607-11. PubMed PMID: 8784635.
- 3) Slabaugh MA, Bojikian KD, Moore DB, Chen PP. Risk factors for acute postoperative intraocular pressure elevation after phacoemulsification in glaucoma patients. *J Cataract Refract Surg* 2014;40(4):538–544.
- 4) Hayashi K, Yoshida M, Manabe SI, Yoshimura K. Prophylactic effect of oral acetazolamide against intraocular pressure elevation after cataract surgery in eyes with glaucoma. *Ophthalmology* 2017;124(5):701–708.
- 5) Hayashi K, Yoshida M, Sato T, Manabe SI, Yoshimura K. Intraocular pressure elevation after cataract surgery and its prevention by oral acetazolamide in eyes with pseudoexfoliation syndrome. *J Cataract Refract Surg* 2018;44(2):175–181.
- 6) Ahmed II, Kranemann C, Chipman M, Malam F. Revisiting early postoperative follow-up after phacoemulsification. *J Cataract Refract Surg* 2002;28(1):100–108.
- 7) Hayashi K, Yoshida M, Sato T, Manabe SI. Effect of Topical Hypotensive Medications for Preventing Intraocular Pressure Increase after Cataract Surgery in Eyes with Glaucoma. *Am J Ophthalmol*. 2019 Sep;205:91-98. doi: 10.1016/j.ajo.2019.03.012. Epub 2019 Mar 20. PubMed PMID: 30902694.

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