

Generic (Dosage forms)	TRADE Name	Dose / Frequency	Cost / 30day 	Comments *remove contact lenses prior to instilling any eyedrops *occlude the lacrimal punctae for at least 1min after instillation or shut eyes tightly * all suspensions must be shaken prior to use *wait at least 5 minutes between consecutive drops *allergies to preservatives possible																				
β-Blockers: ↓ aqueous production/secretion via sympathetic receptor blockade in the ciliary body (~20-40% ↓ in IOP)																								
Betaxolol BETOPTIC S 0.25% susp 1 gtt q12h \$34 (10ml) Levobunolol BETAGAN 0.25, 0.5% soln 1 gtt q12-24h \$26 (5,10ml) Timolol TIMOPTIC 0.25,0.5% soln 1 gtt q12-24h \$25 (10ml) TIMOPTIC XE 0.25,0.5% gelsoln 1 gtt q24h \$26 (5ml)																								
α/β agonist: ↑ outflow via trabecular meshwork and ↓ production of aqueous humour (~20-25% ↓ IOP)																								
Dipivefrin PROPINE 0.1% soln 1 gtt q12h \$19 (10ml)																								
α2 agonists: ↓ aqueous production via local α2 agonist action (~18-27% ↓ IOP)																								
Apraclonidine IOPIDINE 0.5%; 1% soln [®] 1 gtt q8-12h \$32 (5ml) Brimonidine ALPHAGAN / PMS 0.2% soln 1 gtt q8-12h \$35 (10ml) ALPHAGAN P  0.15% soln 1 gtt q8-12h \$46																								
PNS agents: (Direct and Indirect) ↑ outflow via trabecular meshwork (~20-30% ↓ IOP)																								
Direct acting agonists:																								
Pilocarpine 1,2,4,6, (10 [⊗]) % soln; 1 gtt q4-12h \$10 (10ml) 4% gel PILOPINE-HS ½ " at HS \$23 (5g)																								
Indirect Acting agonist (AChE inhibitor):																								
Echothiophate soln X Summer 2001 - D/C by Co PHOSPHOLINE IODIDE																								
Carbonic Anhydrase Inhibitors: ↓ secretion of aqueous humour by 40-60% (~15-25% ↓ IOP)																								
Brinzolamide AZOPT 1% susp 1 gtt q8-12h \$26 (5ml)																								
Dorzolamide TRUSOPT 2% soln 1 gtt q8-12h \$27 (5ml)																								
Prostaglandin F2α analogue: active metabolite (latanoprost acid) ↑'s outflow via uveoscleral route (~25-35% ↓ IOP)																								
Latanoprost XALATAN 0.005% soln 1 gtt q hs \$39 (2.5ml) <small>1 study showed hs better than am dosing</small>																								
Travoprost TRAVATAN 0.004% sol 1 gtt qhs \$39 (2.5ml)																								
Bimatoprost LUMIGAN 0.03% sol 1 gtt qhs \$46 (3ml)																								
Combination Therapies: multiple mechanisms of action (synergy)																								
<table border="1"> <thead> <tr> <th></th> <th>Sig</th> <th>Cost#</th> <th></th> </tr> </thead> <tbody> <tr> <td>Dorzolamide/ Timolol :COSOPT (2%/0.5%) soln -bottle/Ocumer Plus</td> <td>1 gtt q12h</td> <td>\$38 (5,10ml)</td> <td rowspan="5">Timolol and pilocarpine have additive effects on IOP (i.e. ~↓ 40-70%) Dorzolamide and timolol have additive effects on IOP (i.e. ~↓ 35-65%) XALACOM was better tolerated & more effective than COMBIGAN in one 6 month trial⁷ Combination products may offer both cost & convenience advantages over same agents given separately</td> </tr> <tr> <td>Timolol/ Latanoprost: XALACOM (0.5%/0.005%) susp ⊕</td> <td>1 gtt hs</td> <td>\$44 (2.5ml)</td> </tr> <tr> <td>Timolol/ Pilocarpine: TIMPILO 2 (0.5%/2%) & TIMPILO 4 (0.5/4%) susp</td> <td>1 gtt q12h</td> <td>\$27 (5ml)</td> </tr> <tr> <td>Levobunolol/ Dipivefrin: PROBETA (0.5%/0.1%) soln</td> <td>1 gtt q12h</td> <td>\$25 (5,10ml)</td> </tr> <tr> <td>Timolol/ Brimonidine: COMBIGAN ⊗ (0.5%/0.2%) susp</td> <td>1 gtt q12h</td> <td>\$31 (5ml)</td> </tr> </tbody> </table>						Sig	Cost#		Dorzolamide/ Timolol :COSOPT (2%/0.5%) soln -bottle/Ocumer Plus	1 gtt q12h	\$38 (5,10ml)	Timolol and pilocarpine have additive effects on IOP (i.e. ~↓ 40-70%) Dorzolamide and timolol have additive effects on IOP (i.e. ~↓ 35-65%) XALACOM was better tolerated & more effective than COMBIGAN in one 6 month trial ⁷ Combination products may offer both cost & convenience advantages over same agents given separately	Timolol/ Latanoprost : XALACOM (0.5%/0.005%) susp ⊕	1 gtt hs	\$44 (2.5ml)	Timolol/ Pilocarpine : TIMPILO 2 (0.5%/2%) & TIMPILO 4 (0.5/4%) susp	1 gtt q12h	\$27 (5ml)	Levobunolol/ Dipivefrin : PROBETA (0.5%/0.1%) soln	1 gtt q12h	\$25 (5,10ml)	Timolol/ Brimonidine : COMBIGAN ⊗ (0.5%/0.2%) susp	1 gtt q12h	\$31 (5ml)
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Notes: POAG= primary open angle glaucoma; IOP= intraocular pressure; Cost # per-month of therapy in Sask. incl. mark-up & dispensing fee (when multiple strengths/intervals exist, **bolded strength/interval** used to calculate cost) ▼=covered by NIHB

⊗=non-form =EDS AChE=acetylcholinesterase BP=blood pressure CAInh=carbonic anhydrase inhibitors CI=contraindication CNS=central nervous system H/A=headache MOA=mechanism of action PNS=Parasympathetic nervous system SE=side effect ⊗=not NIHB **55**

References: RxFiles - Glaucoma

- ¹ Dipiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM. *Pharmacotherapy: a pathophysiologic approach*. Fourth ed. Stamford, CT: Appleton and Lange; 1999:1470-75.
- ² Boucher M. Glaucoma: Keeping a close eye on your patients. *Pharmacy Practice* 2000; 16(2): 61-66
- ³ Tsao S. The use of drugs in glaucoma patients. *CPJ* 2000; 133(7): 30-34.
- ⁴ Micromedex 2004
- ⁵ Khaw PT, Shah P, Elkington AR. Glaucoma--1: Diagnosis. *BMJ*. 2004 Jan 10;328(7431):97-9.
- ⁶ Khaw PT, Shah P, Elkington AR. Glaucoma--2: Treatment. *BMJ*. 2004 Jan 17; 328(7431): 156-8.
- ⁷ Garcia-Sanchez J, Rouland JF, Spiegel D, Pajic B, Cunliffe I, Traverso C, Landry J. A comparison of the fixed combination of latanoprost and timolol with the unfixed combination of brimonidine and timolol in patients with elevated intraocular pressure. A six month, evaluator masked, multicentre study in Europe. *Br J Ophthalmol*. 2004 Jul;88(7):877-83.