

The 56-year-old client **Murina Suleiman** came to the ophthalmology clinic for a follow up after experiencing loss of visual field within the last week. This patient has a history of open-angle glaucoma and post-partum cardiomyopathy. For the last six months she has been taking a prostaglandin analog. Upon assessment it is revealed that the patient is suffering from a decrease in central and peripheral vision loss. After a tonometry test is completed, it is found that Murina is still experiencing inner ocular pressure (IOP). Her current medications are latanoprost (Xalatan) 0.005% ophthalmic solution, one drop per eye daily and metoprolol (Lopressor) 25 mg PO daily. She is not a smoker, or a drinker, has no known allergies, and her physical exam is unremarkable.

Open-angle glaucoma is a chronic disease characterized by the atrophy of the optic nerve, open anterior chamber angles, visual field loss the loss of ganglion cells of the retina, and its axons (Gedde et al., 2021). Generally, a bilateral disease that can be asymmetric, open-angle glaucoma risk factors include a familial history, lower perfusion of ocular pressure, elevated intraocular pressure, age, and are higher risk in African, Latino/Hispanic, and Asian American in ethnicities (Gedde et al., 2021). In 2020, it was estimated that there are 53 million cases of open-angle glaucoma in the world with 3% of that population being between the ages of 40 to 80 years of age (Gedde et al., 2021).

There are three primary assessments that can be completed to assess for open-angle glaucoma those are IOP, assessing the optic nerve head and retinal nerve fiber layer, as well as an evaluation of the visual field (Gedde et al., 2021). After the determination is made that the patient has loss of visual field, decreased central and peripheral vision the first treatment of open-angle glaucoma is a prostaglandin analog which the patient has already done. For the next step in treatment of open-angle glaucoma the CPG recommends an ophthalmic beta blocker. However, in this case the patient is already on a beta blocker, so this is already in her system and the inappropriate medication to prescribe. The next line of therapy to try would be an anti-cholinesterase agent (Gedde et al., 2021). In this case I would choose echothiophate (Phospholine Iodide) 0.03% ophthalmic solution, 1 drop in each eye 2 times daily in addition to her current treatment of latanoprost (Xalatan) 0.005% ophthalmic solution one drop in each eye once daily, and her metoprolol 25mg (Gedde et al., 2021). The use of echothiophate (Phospholine Iodide) 0.03% ophthalmic solution, 1 drop in each eye 2 times daily can help to increase trabecular outflow and reduce the IOP by 20%–25% (Gedde et al., 2021).

Echothiophate will inhibit the breakdown of acetylcholine and increase acetylcholine at muscarinic receptors of the eye (Katzung & Vanderah, 2021; Rosenthal & Burchum, 2021). This will then cause pupillary constriction to occur and help to focus the lens to increase the patient's near vision, and reduce IOP (Katzung & Vanderah, 2021; Rosenthal & Burchum, 2021). I would then go over some possible side effects of the new medication with her. Some of the possible side effects are retinal detachment, decrease in vision, conjunctivitis, contact dermatitis, issues with conjunctival tissue such as shrinkage and scarring, eye and brow pain, and increased saliva (Gedde et al., 2021). If any of these things occur,