



## Role of Ocular Therapeutics and Pharmacology in Ophthalmic Practice

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We are in the era of ophthalmology subspecialties in the present era as we have different ophthalmic subspecialties dealing with different and various ophthalmic disorders like

- Paediatric ophthalmology
- Phaco surgeon
- Lasik
- Neurophthalmology
- Oculopathy
- Glaucoma
- Vitro retinal
- Ant segment
- Post segment
- Reconstructive etc

In this context every ophthalmologist has to have a comprehensive knowledge of pharmacodynamics side effects of not only ocular medications but also various systemic drugs which are used in various medical and surgical conditions and may have ocular side effects let me take you to the scenario of ocular side effects of first commonly used topical and systemic ophthalmic medicines.

Prostaglandin analogues are commonly used antiglaucoma medication its long term side effects are as follows:

- Conjunctival Congestion
- Hyperaemia
- Blepharitis
- Allergic Conjunctivitis
- Blepharoconjunctivitis
- Trichomegaly
- Loss of periorbital fat
- Dry eye
- Heterochromia
- Cystoid macular edema

Cyclosporine's and tacrolimus ointment also cause trichomegaly beta blockers also used as topical drops like timolol 0.25 or 0.5 percent in glaucoma should not be given to patients who have asthma or cardiac problem as they can precipitate an attack of

asthma or cardiac failure alpha blockers used in prostate also have ocular side effects in past pilocarpine eye drops on the strength of 12 percent was a common anti glaucoma medication it is an anticholine esterase inhibitor its prolonged use would result in pupillary stenosis and conjunctival folliculitis fluorescein a dye used for various ophthalmic diagnostic conditions has also got ocular side effects most common is yellow vision steroid drops can cause glaucoma.

Let us go to the systemic drugs used for various medical and surgical conditions having ocular side effects the list is huge, but I am only posting the important ones.

Systemic use of corticosteroids can cause cataract ethambutol a very common antitubercular drug has following ophthalmic side effects:

- Affects colour vision first red and blue the yellow and green
- Affects visual fields
- Can cause optic neuritis however it is dose dependant can be reversed if dose is reduced.
- Affects vision and refraction
- Chloroquine hydroxychloroquine cause bullous eye maculopathy.
- Acetazolamide causes numbness and tingling sensations of extremities.
- Potassium depletion loss of appetite.
- Cystinuria stone formation.
- Antidepressants cause dry eye opiates cause miosis
- Atropine eye drops and ointment
- Cycloplegia
- Dryness
- Fever
- Flushing
- Irritability
- Convulsions cannabis indica or bhang
- Miosis.
- Lowering of pressure

- Conjugate eye deviation
- Oral contraceptive pills
- Odema of lids
- Vacuolation of lens
- Migranous type of head ache
- Thromboembolic phenomenon

Antihistamines are risk for glaucoma antipsychotic medication such as thorazine toxic to retina.

Antimalarials e.g. Plaquenil used for SLE arthritis are toxic to retina.

Some sulpa drugs like topaz or antihistamines can trigger an attack of glaucoma in a narrow angle.

Flurbiprofen has ocular side effects like eye pain or redness.

Vision changes severe burning of eyes or itching.

Bisphosphonates used by post-menopausal women can have

- Orbital inflammation
- Uveitis scleritis
- Various eye ointments can have following ocular side effects
- Burning eye sensations
- Stinging ophthalmic effects
- Blurred vision.

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