

Common ophthalmic drugs

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AP Ophthalmology

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- In pharmacology, a pharmaceutical drug, also called a medication or medicine,
 - It is a chemical substance used to treat, cure, prevent, or diagnose, a disease or to promote well-being.

MODES OF ADMINISTRATION

- **DRUG DELIVERY IN EYES**

• Topical	• Periocular	• Intraocular	• Systemic
• Drop	Subconj.	Intracameral	Oral
• Ointment	Sub Tenon	Intravitreal	Intravenous
• Gel	Peri-bulbar	Intramuscular	
	Retro bulbar		

STANDARD COLOURS FOR DRUG LABELING & BOTTLE CAP

- Yellow, Blue : B blocker
- Red : Mydriatics and cycloplegics
- Green : Miotics
- Orange : Carbonic anhydrase inhibitors
- Brown or tan : Anti-infective agents
- Gray : NSAIDS
- Pink : Steroids

COMMON DRUGS USED IN OPHTHALMOLOGY

- MYDRIATRICS AND CYCLOPLEGICS AGENTS
- ANTI - VIRAL DRUGS
- ANTI – FUNGAL DRUGS
- ANTI-INFLAMMATORY AGENTS
- LUBRICATING AGENT AND ARTIFICIAL TEAR
- INTROCUAR AND IRRIGATING SOLUTIONS
- OTHER DRUGS AFFECTING EYE

MYDRIATRICS AND CYCLOPLEGICS AGENTS

- MYDRIATICS

- Only mydriasis
- Care should be taken in older patients
 - Phenylephrine

- CYCLOPLEGICS

- Along with mydriasis it also causes paralysis of accommodation
 - Atropine sulfate
 - Homatropine hydrobromide
 - Cyclopentolate hydrochloride
 - Tropicamide

PHENYLEPHRINE

- Direct acting drug

- Pupil dilation for diagnostic purpose
- **Indication**
 - COAG
 - Subacute or chronic ACG after iredeotomy
 - Refused surgery cases
- **Dosage**
 - 1 or 2 drops for each refraction



- **Contraindication**

- Narrow angle glaucoma
 - Hypertensives.
 - Type 1 diabetes mellitus.
 - Aneurysms.
 - Cardiac diseases
 - Infants
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- **Adverse effects**

- Mild stinging
- HTN,
- Headache
- brow ache

ATROPINE

- Atropine sulfate is anticholinergic – 0.5%, 1%, 3%
- Strongest drug in cycloplegics
- Inhibitor of muscarinic action of acetylcholine
- Indication
 - Mydriasis & cycloplegia
 - Pupil dilation in inflammatory condition of iris
 - Amblyopia therapy



- Contraindication

- 1° glaucoma
- Hypersensitive

- Adverse effects

- Allergic responses
- Blurred vision
- Photophobia
- Dryness of skin & mouth
- Skin rash

- Dosage – 1 or 2 drops 0.5% to each eye, twice daily for 1 to 3 days prior to examination

HOMATROPINE

- First anticholinergic
- Directly blocks muscarinic action of acetylcholine
- Its effect last for longer time
- **Indication –**
 - Cycloplegic refraction
 - Treatment of inflammatory uveal tract condition

- **Contraindication –**

- Tendency with occludable angles
- Patient who have allergic to atropine

- **Adverse reaction**

- Follicular conjunctivitis
- Vascular congestion
- Edema exudate

- **Dosage –** 1 or two drops repeated in 5 to 10 minute if necessary

CYCLOPENTOLATE

- Cyclopentolate hydrochloride 1% is an anticholinergic

- **Indication**

- Cycloplegics of children under the age 12 to 20 yrs

- **Contraindication**

- Narrow angle glaucoma
 - Hypersensitive
 - Children with emosional problems



TROPICAMIDE

- Most common anticholinergic mediatric drug
- Stronger – 1%, paralysis accomodation 0.5% produce mydriasis with slight cycloplegia
- **Indication**
 - Diagnostic process
 - Pre and post operative stages
 - Infants
 - combination with phenylephrine

- **Contraindication**

- Narrow angle glaucoma
- Hypersensitive

- **Adverse effects**

- Increased IOP, blurring of vision, photophobia
- Psychotic reaction
- Dryness of mouth, headache or allergic reactions

- **Dosage** – One drop followed by second drop in 5 minutes of arc

ANTI - VIRAL DRUGS

- Locally given to the eye
- HSV, HZV, CMV retinitis
- **Common drugs**
 - Acyclovir
 - Vidarabine
 - Ganciclovir

ANTI – FUNGAL DRUGS

- Common drugs

- Natamycin
- Amphotericin B



ANTI-INFLAMMATORY AGENTS

- **Non – steroidal**

- Topical :- Flurbiprofen sodium
- Systemic :- Keterolac tromethamine

- **Steroidal**

- Topical :- Fluoromethelone
- Systemic :- Prednisolone



LUBRICATING AGENT AND ARTIFICIAL TEAR

- **Indication**
 - Ocular irritations in various diseases
 - Dry eyes
- **Commonly available commercial tear substitutes**
 - REFRESH TEARS
 - TEARS PLUS
 - ARTIFICIAL TEARS
- **Warning** – Discontinue using if any irritation produces
- **Direction for use** – 1 or 2 drops as frequently as required

INTRAOCULAR AND IRRIGATING SOLUTIONS

- Contain concentration of inorganic & organic constituents
- Mainly used in surgery procedure
- Keep the globe inflated
- **Indications:**
 - Cataract surgery
 - Vitrectomy & posterior segment surgeries
 - Anterior segment reconstruction

OTHER DRUGS AFFECTING EYE

Drug	Uses	Side effect
Amiodarone	A cardiac arrhythmia drug	Corneal vortex keratopathy Optic neuropathy
Digitalis	A cardiac failure drug	Chromatopsia
Chloroquine's	Malaria, Rheumatoid Arthritis, SLE	Corneal verticillata Retinopathy
Thioridazine	A psychiatric drug	Pigmentary retinopathy
Ethambutol	An anti-TB drug	Optic neuropathy
Chlorpromazine	A psychiatric drug	Corneal punctate epithelial opacities Lens surface opacities

Thanks