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**Diploma in Pharmacy 2<sup>nd</sup> Year**  
**Pharmacology**  
**Chapter 3 : Drugs Acting on Eye**

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**PHARMACOLOGY**  
**Chapter 3**  
**Drugs Acting on Eye**

→ These are the drugs which used to treat eye problems , like inflammation , Infection and reduction of intraocular pressure.

## Miotics

➤ The drugs are used to produce miosis / constriction of pupils are called Miotics.

### Classification

1. Muscarinic Agents : Pilocarpine , carbachol and other cholinergic drugs .
2.  $\alpha$  adrenergic blockers( relaxation of dilator muscle ) : Tolazoline and other alpha blocker . pupil get constricted when iris dilated .

### Indications

- ❖ These drugs are used to treat glaucoma .
- ❖ To control mydratic effect.
- ❖ To prevent or break adhesion ( attachment ) between iris and lens.

### Contraindications

- ❖ These are contraindicated during pregnancy.
- ❖ These are contraindicated during lactation.
- ❖ These are contraindicated during in children because its safety is not clear.
- ❖ These are contraindicated in patients are above 65 years.
- ❖ These are contraindicated in patients are suffering from cataract.

### Dose

- Pilocarpine : 1-4% pilocarpine nitrate in eye drops.
- Tolazoline ; 1-2mg/kg intravenously over 10 minutes.

# Mydriatics

- The drug are used to dilate the pupil to perform easier and detailed examination.

## Classification

1. Adrenergic agonist : Adrenaline , Phenylephrine.
2. Cholinergic Antagonist : Tropicamide , Atropine , cyclopentolate.

## Indications

- These are used to dilate the pupil.
- These are used for examination of retina and optic nerves.
- These are used for diagnosis of iris problems.
- These are used to determine refractive error ( it is a disease in which eye can not focus the image clearly and result in blurred vision.

## Contraindications

- ▲ It is contraindicated in hypertension.
- ▲ In Glaucoma.
- ▲ In intraocular pressure.

## Doses

- Tropicamide : 0.5% solution dilate for 30 minutes nearly.
- Atropine : 1% solution 7-12 days
- Cyclopentolate : 1-2 % 24 hours

# Glaucoma

- Glaucoma is a ocular ( eye ) Disease in which intraocular pressure is increased and damage the optic nerves which causes visual loss.
- When drainage canal of aqueous humor get blocked , the intraocular pressure increases.

## There are two types of glaucoma :

- Open Angle Glaucoma
- Narrow / Closed Angle Glaucoma

## Classification

1. Osmotic Agent : Mannitol, Glycerol
2.  $\beta$ - Adrenergic blockers : Timolol, Betaxolol, Brimonidine
3. Miotics : Pilocarpine,

## Indication

- ▲ For the treatment of glaucoma
- ▲ Reduce Intraocular Pressure
- ▲ Eye pain etc

## Dose

- Timolol 0.23 – 0.5 % one drop B.D
- Brimonidine 0.2% B.D

## Contraindication

- Peptic Ulcer
- Hypotension
- Epilepsy etc

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