

PHB



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Course Name : D. Pharm
Year : Second Year
Subject Name : Pharmacology
Topic Name : Mydriatics

Mydriatics are a class of drugs used to dilate the pupil of the eye. They work by causing relaxation of the iris sphincter muscle, leading to pupil dilation. Mydriasis (pupil dilation) facilitates eye examinations, improves visualization of the retina during ophthalmic procedures, and allows for the treatment of certain eye conditions.

Classification:

Mydriatics can be classified into different categories based on their mechanism of action and duration of action. The main classes include:

1. Anticholinergics (parasympatholytics):

Example:

- Tropicamide
- Cyclopentolate
- Atropine

2. Adrenergic agonists:

Example:

- Phenylephrine

Note:

- a. Tropicamide (Anticholinergic)
- b. Cyclopentolate (Anticholinergic)
- c. Atropine (Anticholinergic)
- d. Phenylephrine (Adrenergic agonist)

Mechanism of Action:

- a. **Anticholinergics:** Block muscarinic acetylcholine receptors in the iris sphincter muscle, preventing the action of acetylcholine and leading to relaxation of the muscle and pupil dilation.
- b. **Adrenergic agonists:** Stimulate alpha-adrenergic receptors in the iris dilator muscle, causing contraction and pupil dilation.

Dose:

- The dosage of mydriatics varies depending on the specific medication, patient age, and the desired duration of pupil dilation.

- For topical ophthalmic use, typical doses include one to two drops of the solution instilled into the affected eye(s).

Uses:

- a. Ophthalmic Examinations:** Mydriatics are used to dilate the pupil for routine eye examinations, fundoscopic examinations, and refraction tests.
- b. Ophthalmic Procedures:** They facilitate visualization of the retina and posterior segment of the eye during ophthalmic procedures such as retinal photography, laser treatment, and intraocular surgery.
- c. Treatment of Eye Conditions:** Mydriatics may be used therapeutically to manage certain eye conditions such as uveitis, posterior synechiae, and accommodative spasm.

Contraindications:

- Hypersensitivity or allergy to the drug or its components.
- **Narrow-angle glaucoma:** Mydriatics can exacerbate intraocular pressure elevation in patients with narrow-angle glaucoma, leading to an acute angle-closure crisis.
- **Infants and young children:** Some mydriatics may have systemic effects and are not recommended for use in infants or young children without medical supervision.
- **Certain medical conditions:** Caution should be exercised in patients with cardiovascular disease, urinary retention, or gastrointestinal obstruction, as mydriatics can exacerbate these conditions.