

**(26/3/20)**

# **OPHTHALMIC PRODUCTS**

## **\*Study of essential characteristic of different ophthalmic preparation**

### **# Introduction**

- Preparation used for the eyes refer to the ophthalmic preparation .
- Ophthalmic products are the sterile products meant for instillation in to the eyes in the space between eye leads band eye balls.
- These products must be sterile and are prepared under the same condition and same methods as other parenteral preparation.
- These products may be instilled into the eye by either in the form of drops, sprays or mists, continuous streams for irrigation and applied as ointments.

### **# General consideration :**

The human eye is a very sensitive organ . it can be quickly affected by any change in environment. Thus ophthalmic products many precautions to be taken while their preparation so as to get the product possessing following characteristics. Products with all these characteristics are supposed to be ideal ophthalmic products.

- 1) They must be sterile to prevent the serious eye infections.
- 2) They should be free from foreign particulate matter since they cause irritation and discomfort to the eye.
- 3) They should be iso- osmotic with the lachrymal secretion . An eye can tolerate 0.6 to 2.0% w/v solution of sodium chloride.
- 4) They should have a pH of tear fluid. pH may slightly vary but it should not cause discomfort, pain and irritation to the eye.
- 5) They should have optimum viscosity (25-50cps) to increase the contact time of the preparation in the eye.
- 6) They should contain proper preservative the growth of microorganisms.

## # Essential characteristics of different ophthalmic preparation :

### ➤ **Foreign particles**

All the ophthalmic product should be clear and free from the foreign particles , fibres, and filaments.

### ➤ **Viscosity**

In order to prolong the contact time of the drug in the eye, various thickening agents are added in them like polyvinyl alcohol ( 1-4 %), polyethylene glycol , methyl cellulose.

The thickening agent are passes following properties:

- It should be easy to filter.
- It should be easy to sterilize
- It should be compatible with other ingredient.
- It should passes the clarity level.

### ➤ **Tonicity**

Ophthalmic preparations are must be isotonic with lachrymal secretions to avoid discomfort and

irritation. 1.9 % boric acid and sodium acid phosphate buffer are commonly used as isotonic vehicle.

➤ **pH of the preparation**

pH is plays very important . role in the therapeutic activity , solubility, stability, and comfort to the patients. The tears have pH near about 7.5

➤ **Sterility**

The ophthalmic preparation are must be sterile when it prepared. Pseudomonous aeruginosa is very common gram negative bacteria which generally found in the ophthalmic product and it may be cause serious infection to the cornea.

➤ **Surface activity**

The vehicle are used in the ophthalmic preparation must good wetting ability to penetrate cornea and other tissue. The benzoalkonium chloride, polysorbate 20, polysorbate 80, etc are some of surfactant which are commonly used.