WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Ocular Drug Delivery (OCUSERT)

Gawali Vijay Appu [1], Joshi D. A[2], Nandkishor B. Bavage[3], Shyamlila B. Bavage[4]

[1].B. Pharmacy Final Year Student, Latur College of Pharmacy ,Hasegaon,Tq.Ausa, Dist. Latur-413512, Maharashtra, India
[2].Department of Pharmaceutics, Latur College of Pharmacy ,Hasegaon, Tq. Ausa,Dist. Latur-413512 Maharashtra, India
[3].Department of Pharmaceutical Chemistry Latur College of Pharmacy ,Hasegaon,Tq.Ausa,Dist. Latur-413512 Maharashtra, India
[4].Department of Pharmacognosy, Latur College of Pharmacy Hasegaon, Tq. Ausa, Dist. Latur-413512 Maharashtra, India

INTRODUCTION

EYE Repair

Ophthalmic preparations are a sterile product, intended for eye contact between the eyelid and the eyeball. These products should be isotonic with lachrymal secretion to avoid discomfort and irritation. The pH should be controlled to 7.4 to avoid irritation. Vehicles in repair must have good drainage ability to penetrate the cornea and other tissues. Ophthalmic products include: -

- Solution
- Suspension
- Fat

Solution

These are sterile water solutions used for eye cleansing. Eye solutions are given in a concentrated way and need to be rinsed with warm water immediately before use. They are usually applied with a clean eye wash or sterile cloth and a large amount of solution is allowed to flow quickly over the eye.

Eg .: - Sodium chloride lotion B.P.C
- Sodium bicarbonate eye lotion

Suspension

Eye drops are rarely used, compared to eye drops. They are prepared only in those cases, where the drug does not dissolve in the car you want or does not stabilize in a liquid form, and is used to produce a continuous preparation action. The size of the suspension particles should be good to avoid irritation. The preparation was thoroughly stirred before use to distribute the drug particles evenly.

Eg .: - Pilocarpien suspension
- Nitroglycerin suspension

Fat

Eye ointment is an empty preparation for eye use. These are prepared under aseptic conditions and packaged in sterile folding tubes, which keep the preparation sterile until complete. The oil has a long contact with the eye and produces a continuous action. It has great storage stability. Coating of oil-producing film over the eye and blurred vision may occur.

Eg .: - Atropine B.P
- Chloramphenicol oil

DELIVERY MANAGEMENT SYSTEM

A controlled delivery system is, which delivers a drug at a predetermined price, locally or systematically, for a specific period of time. The target drug delivery system is, which brings the drug to its place of operation and not to the unintended organs or tissues. These agents are designed to produce high stability work and bioavailability.

The eye drops are extracted and dispersed in lachrymal secretions. The rate of drug release is controlled by its penetration into the membrane wall. The active agents are the same throughout the level that controls the polymer matrix and the rate of drug release is controlled by the distribution of the polymer matrix.

IMPORTANT ANATOMY AND EYE PHYSIOLOGY

THE HUMAN EYE

The accessory structures of the eye are the eyelids, eyelids, eyebrows, lachrymal apparatus and the outer eye muscles. The diameter of the eye is 23mm.

Eye cover

The upper and lower eyelids, which provide eye shadow during sleep, protect the eyes from excessive light and external factors and spread the moisturizing liquid over the eyeballs. Each eyelid contains subcutaneous epidermis tissue, orbicularis muscle tissue fibers, tarsal plate, tarsal glands and conjunctiva.

Eyebrows and eye brows:

Eyebrows, protruding from the border of each eyelid. Eyebrows, curved inversely above the upper eyelid, help protect the beads from foreign objects, sweating, and direct sunlight.

Features of lachrymal:

Lachrymal apparatus is a group of stutters that produce and excrete lachrymal fluid. Tears run down the middle of the front of the eyeball to enter two small points called the lachrymal puncta.

Outer eye muscles:

Six external eye muscles move each eye:

Upper rectus

Lower rectus

Back rectus

Middle rectus

Oblique high

Low oblique

THREATENING AND DRUG ABUSE

Physical barriers to the diffusion and absorption of productive drug-releasing implants into the precorneal and corneal areas. The precorneal barriers responsible for the lack of ocular bioavailability of forms of generalized ophthalmic dose drainage, lacrimation, tear dilution, tear replacement and conjunctival absorption. Withdrawal of the drug solution away from the precorneal area has been shown to be very important in reducing the time of drug contact with the cornea and consequently the acquisition of ocular bioavailability of topical dose forms. The infused dose leaves the precorneal area within 2 minutes of implantation in humans. Drainage allows the drug to be absorbed into all nasal mucosa throughout the circulatory system. The conjunctiva also has a very large area, 5 times above the cornea which makes the loss noticeable. Both conjunctival and nasal mucosa have been shown to be the main potential sources of systematic absorption of drugs used by them.

Metabolism in the precorneal area has been shown to account for increased drug loss. The lower part of the dose used continues to be rapidly eliminated by intraocular tissue and loss of the Schlemm canal or by ciliary or suprachoroidal absorption in the episcleral space. Drug binding to proteins also contributes to drug loss through the loss mechanism of precorneal parallel. Tears contain both free and bound drugs, which are released immediately before the eye.

Existing methods for the delivery of ocular drugs are therefore still old and ineffective. However, the design of ocular systems gradually changes from the original to the rational basis. Interest in the wide range of eye drug delivery services has increased in recent years due to increased understanding of a number of ocular physiological processes and the nature of the disease. This review focuses on the approaches to effective ocular delivery systems. Efforts were focused.

FORMS

Recent trends currently being tested include Polymeric solutions, phase modification systems, mucoadhesive / biodhesive dosage forms, collagen shields, peudolatices, ocular penetration enhancers, ocular iontophoresin and various ocular.

1. Polymeric Solution: -

The addition of polymers such as methylcellulose, polyvinyl alcohol, hydroxy propylene cellulose and polyvinyl pyrrolidone to the eye solution increases the corneal penetration of the drug. This may be due to an increase in the viscosity of the tears, which in turn reduces the rapid rate of dehydration, increases the time it takes to touch the cornea and thus lasts longer the fullness of the tree's tears.

2. Sector Transformation Plans: -

These forms of liquid form change to a jelly or solid phase when placed in a cul-de-sac. Commonly used polymers Lutrol FC-127 and poloxamer 407 appear to rise when temperatures rise to 37 ° C. -pH 7.4. Gelrite a new phase transition systems were tested by Mazuel and frieteyre, in 1987 the low acetyl gum that flows clearly in front of sodium ions through tears. The concentration of sodium ion in the tears, 2.6 g / L, was mainly due to the flow of the substance when it is injected into the conjunctival sac. These polymers serve as a good release material for eye use but the more active structures and lower pH of CAP, however limit their use. It has excellent ocular tolerance, low toxicity per os and can be formulated as an isotonic neutral solution, all of which make it a safe excipient for the ocular line. It proves a real advantage over other polymers to withstand sterilization by

incorporating autoclaving.

3. Fake worship

The organic polymer solution is dissolved in a liquid phase to form an o / w type emulsion later using the appropriate methods, i.e., by applying a vacuum, or by using a controlled temperature. Water is extracted partially at a rate where residual water is sufficient to keep the polymeric phase dispersed and dispersed. Such dispersion refers to pseudoplastics which upon application leave a solid polymer film that persists in the drug. Drugs from such systems are released gradually over a period of time as time ensures better ocular availability and patient compliance by avoiding frequent preparation of the preparation.

4.Ocular Penetration Enhancers

Entry enhancers such as actin filament inhibitors, surfactants, bile salts, chelators and organic compounds have been used to increase the bioavailability of formulated peptides and ingested protein due to poor cell size, charge, hydrophilic and its tendency to degradation. with peptidase in the eyes.

5. Iontophoresis of the eyes: -

Iontophoresis is the process by which a direct current receives ions into cells or tissues. Antibiotics, antifungals, Anesthetic agents and adrenergic agents have been tried in this way.

REFERENCES

1.Ocular drug delivery SA. Menqi and S. G. Deshpande

2.A Literature seminar on control drug delivery system DipaliChaudhari, University of Alabama

3.Chien. Y. W edited, Novel drug delivery system, second edition, Marcel Dekker, New York

4.Charsden, M. and R. Langer editors, Biodegradable Polymers as drug delivery system, Marcel Dekker, New York

5.Domb and A. J edited polymeric Safe – specific pharmacotherapy, John Wiley and sons, New York

6.Pharmaceutics 2 R.M Metha Published by VallabhPrakasan