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Review Article

A Review on Eye Flu Disease

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ABSTRACT

Eye flu, also known as conjunctivitis or pink eye, is a highly contagious disease. Conductivity is an inflammation of the conjunctiva and has 4 main causes: viruses, bacteria, allergens and irritants. Of these, bacterial conjuctivities is the most common and is contagious, especially when the dentist works with an infected person and that person transmits it to the next patient. It can cause various clinical manifestations and in some cases is even responsible for blindness. spread from one person to another in different ways. There is currently no standard treatment for eye flu. Many drugs belonging to different drug systems are used without giving consistent results. The study found that the application of anjana karma (eye drops), eye drops (ascyotana) and external application of the paste on the eyelids (vidalaka) as mentioned in ancient texts produce an additional potentiated synergistic effect, which will act as an important. Element in the treatment of eye flu. If these treatment modalities become a daily routine for healthy people living in endemic areas susceptible to this disease, they will develop their own immune system against this contagious entity.

INTRODUCTION

Eye flu, also known as pink eye or conjunctivitis is among the most common eye disease worldwide. Eye flu is an infection that affects the eyes. It is contagious, which means this disease can pass from person to person easily[1] Conjunctivitis is causes by inflammation and swelling of the conjunctiva, leading to blood vessel engorgement, eye discharge, and pain. It affects many people globally and is a common reason for visits to general medical and ophthalmology clinics. Over 80% of acute conjunctivitis cases are diagnosed by non-ophthalmologists, such as internists, family medicine doctors, pediatricians, and nurse practitioners. This results in significant economic strain on the healthcare system and contributes to a large number of office visits across various medical fields. Treatment costs for bacterial conjunctivitis in the United States are estimated to be around $857 million annually[2].

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Reports indicate that nearly 60% of patients with acute conjunctivitis are prescribed antibiotic eye drops, predominantly by non-ophthalmologist physicians. For instance, 68% of emergency room patients receive these drops, compared to only 36% of those who consult an ophthalmologist[3]. Interestingly, patients with a higher socioeconomic status were more likely to be prescribed and actually fill a prescription for their conjunctivitis.[4]conjunctiva is a thin, translucent membrane lining the anterior part of the sclera and inside of the eyelids. It has 2parts, bulbar and palpebral. The bulbar portion begins at the edge of the cornea and covers the visible part of the sclera; the palpebral part lines the inside of the eyelids[5].

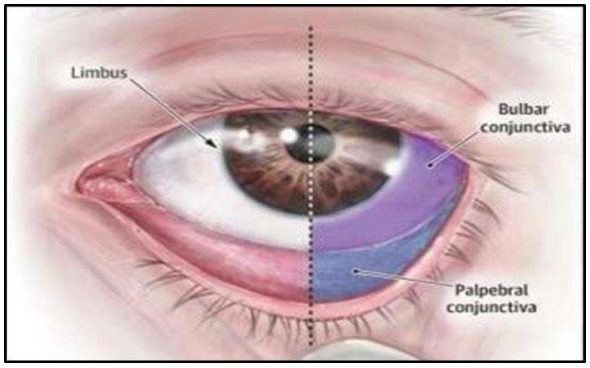

Fig No.1:-Normal Conjunctive Anatomy[61]

Owing to the heterogeneity inherent in the capacity of influenza a viruses to cause illness following multiple modes of infection, there is a need for both a greaterunderstanding of how non-respiratory exposure routes influence disease presentation and progression in mammalian hosts, and heightened investigation regarding the susceptibility of non- respiratory tissues to both human and avian influenza virus. Eye flu, medically known as conjunctivitis, is a common eye condition that affects people of all ages. It is c eyelids. Eye flu causes can be due to various factors, including viral or bacterial infections, allergies, or exposure to certain environmental irritants. This condition can be uncomfortable and bothersome, but with proper care and treatment,most cases of eye flu resolve without complications[6]. Conjunctivitis is a generally encountered condition in ophthalmology conventions throughout the world. In the operation of suspected cases of conjunctivitis, boarding signs for more serious intraocular conditions, analogous as severe pain, dropped vision, and painful pupillary response, must be considered. Also, a thorough medical and ophthalmic history should be attained and a thorough physical examination should be done in cases with atypical findings and habitual course. Concurrent physical test findings with applicable history may reveal the presence of a systemic condition with involvement of the conjunctiva. Bacterial conjunctivitis is encountered less constantly and it's the alternate most common cause of contagious conjunctivitis. Antipathetic conjunctivitis is encountered in nearly half of the population and the findings include itching, fucoid discharge, chemises, and eyelid edema. Long-term operation of eye drops with preservatives in a case with conjunctiva vexation and discharge points to the toxic conjunctivitis as the bolstering etiology. Effective operation of conjunctivitis includes timely opinion, applicable insulation of the various etiologies, and applicable treatment. Conjunctivitis is a condition characterized by the inflammation of the conjunctiva, a thin mucus membrane. The lining protects us from foreign objects, lubricates the eyes and serves as a cover for the sclera. Eye flu can be caused by bacteria and viruses, but it can also be triggered by allergies, chemicals and foreign particles. It is contagious and can be spread by direct and indirect eye secretions. characterized by inflammation of the conjunctivitis[7].

Fig No. 2:-Normal Eye and Infected Eye [62]

Epidemiolgy:

Whether bacterial or viral, conjunctivitis is a frequent issue that millions of Americans Experience every year. According to estimates, conjunctivitis accounts for 1% of primary Physician visits in the United States In India, millions of patients were diagnosed with pink Eye or viral conjunctivitis between June-August, 2023 While bacterial conjunctivitis is the Second most common cause of conjunctivitis, viral conjunctivitis is the most frequent cause, And it can be difficult for primary care doctors to tell the two apart. Medicines are frequently prescribed without a solid reason, which could place an extra financial burden on the patient And increase the number of bacteria that are resistant to medicines. Employers and Educational institutions frequently demand that people with conjunctivitis stay away from their facilities until theinfection has cleared up, potentially increasing the financial burden on Individuals who are afflicted[8].

Pathophysiology :

Regardless of the origin, papillary or follicular conjunctivitis is the most common kind. Both Categories are not pathognomonic for a specific disease entity. A cobblestone pattern of Flattened nodules with central vascular centres is the result of papillary conjunctivitis. It is Frequently related to an allergic immunological reaction or a reaction to a foreign body. Whatever the cause, papillary conjunctivitis has the same histologic features: densely Mast cells in the stromal encircling a central vascular channel. Clustered, flat-topped projections with lenty of eosinophil's, lymphocytes, plasma cells, and Inflammation brought on by pathogens including viruses, bacteria, chemicals, and topical Medicines can also cause follicular conjunctivitis. Follicles are tiny, dome-shaped nodules Without a noticeable central vessel, in contrast to papillae. A lymphoid follicle has a germinal Core filled with immature, proliferating lymphocytes that is surrounded by a ring of mature Lymphocytes and plasma cells histologically. It is found in the sub epithelial region. The Inferior palpebral and finical conjunctiva are frequently where follicles in follicular Conjunctivitis are most noticeable[9].

Etiology :

The sclera, the white portion of the eye, is protected by a thin, semi-transparent membrane Called the conjunctiva. The conjunctiva extends from the limbus of the cornea to the posterior Surface of the eyelids and the sclera. The palpebral conjunctiva is the area on the back of the Lids, and the bulbar conjunctiva is the region covering the scleral. Adenoviruses are the most frequent cause of viral conjunctivitis. The adenovirus is a double stranded DNA virus that isnot encapsulated and is a member of the Adenoviridae family. Upper respiratory tract infections, eye infections, and diarrhoea in children are frequently Accompanied diseases brought on by the adenovirus. Viral infections affect adults more Frequently than they do children, who are more prone to bacterial illnesses. Direct contact With the virus, airborne transmission, and reservoirs like swimming pools are all ways to get viral conjunctivitis[8,9]. For 10–14 days, viral conjunctivitis is extremely infectious in the majority of patients. The best way to avoid spreading the disease to others is by washing your hands and avoiding eye contact[10].

1. Types of eye flu :

Eye flu is an infectious disease; thus, it is important to know its causes. The major causes of eye flu disease are,

1.1 Viral Infections :

Viral conjunctivitis is highly contagious and the most common cause of infectious conjunctiva. It is caused by a virus such as the common cold or herpes simplex virus. This infection is more common in adults than in children. Around 65–90% of cases are caused by adenovirus Eye discharge associated with viral pink eye typically is clear and watery but may include a white or light-yellow mucus component. Patients can generally be advised that viral conjunctivitis is self-limiting and, as there are no specific treatments, for comfort they can use cold compresses, artificial tears or topical antihistamine . Flu in eyes is highly contagious and can spread easily through respiratory droplets or by touching surfaces contaminated with the virus. Viral conjunctivitis typically affects both eyes and can cause redness,irritation, watery discharge, and light sensitivity[11].

1.2 Bacterial Infections :

Bacterial conjunctivitis, often caused by bacteria such as Streptococcus pneumoniae, Haemophilus influenzae, and Staphylococcus aureus, can lead to symptoms similar to those of viral conjunctivitis, including redness, swelling, and discharge from the eye. It's Important to differentiate between the two types, as bacterial conjunctivitis typically requires antibiotic treatment, whereas viral cases often resolve on theirown.If someone is experiencing symptoms, they should consult a healthcare professional for proper diagnosis and treatment. It can occur due to poor hand hygiene,sharing contaminated items, or touching the eyes with unwashed hands. Bacterialconjunctivitis can cause more severe symptoms than viral conjunctivitis, including a thick, yellow or greenish discharge and crusting of the eyelids[12].

Allergic eye flu can be caused by any irritant present in the environment, such as pet hair, dust, pollen or certain medications. It is not an infection but does cause inflammation of the conjunctiva. It can be of two types as well- seasonal allergic conjunctivitis, which may affect individuals during certain seasons and perennial conjunctivitis, which may affect individuals all year round. .Allergic conjunctivitis is not caused by an infection but results from an allergic reaction to allergens such as pollen, pet dander, dust mites, or certain eye drops. This type of flu in eyes is not contagious and typically affects both eyes. Allergic conjunctivitis can cause itching, redness, tearing, and swelling of the eyelids[13].

1.3 Chemical and Foreign Objects :

chemical and foreign particles can trigger symptoms similar to eye flu. Things like smoke, air pollution, and chlorine from swimming pools can cause your eyes to feel itchy and look red. When your eyes come into contact with these irritants, they may react by producing tears and becoming inflamed· is caused by exposure to irritants like chlorine in swimming pools or harsh chemicals in products. This form of conjunctivity[14].

1.4 Herpetic Conjunctivitis :

Follicular conjunctivitis is a common complication of herpes conjunctivitis in both adults and children. The prevalence of acute conjunctivitis caused by the herpessimplex virus ranges from 1.3 to 4.8%, according to estimates. The goal of topical antiviral therapy is to lessen virus shedding and keratitis development. By directly contacting eye or skin lesions or by inhaling infected aerosolized particles, varicella-zoster can induce conjunctivitis, especially when the first and second branches of the trigeminal nerve are affected[15].

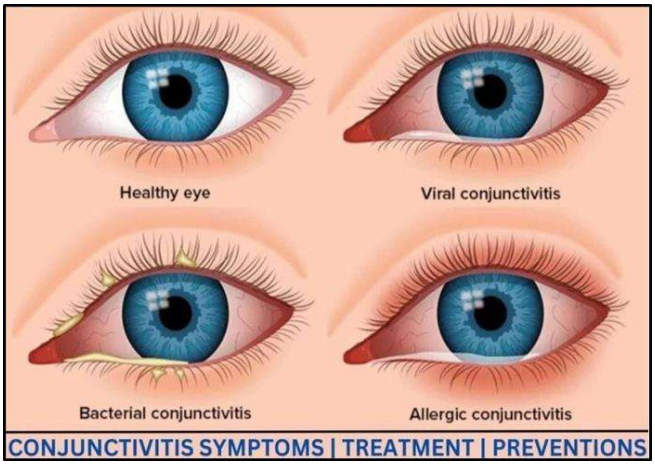

Fig No.3 :- Types of Eye Flu[63]

1.5 Newborn Conjunctivits :

The main eye flu reason behind Newborn conjunctivitis is often due to an infection acquired during delivery. This condition, called neonatal conjunctivitis or ophthalmia neonatorum, requires prompt medical attention to prevent complications and protect the baby's vision[16]

Symptoms Eye Flu :

Redness and Irritation

One of the primary symptoms of flu in the eyes is redness and irritation of the eyes. The conjunctiva becomes inflamed, causing the blood vessels in the eyes to dilate, giving the eyes a pink or red appearance. The eyes may feel scratchy, itchy, or like there is something foreign in them. This redness and irritation are often more noticeable in the mornings or after periods of rest.

Watery Eyes

Excessive tear production, leading to watery or teary eyes, is another common symptomof flu in eyes. The main eye flu reason for watery eyes is the inflammation of the conjunctiva that can stimulate the tear glands, causing an overflow of tears. Watery eyes can lead to discomfort and blurred vision, making it challenging to perform daily activities.

Sensitivity to Light

People with flu in eyes may experience photophobia, a condition where the eyes become sensitive to light. Exposure to bright lights or sunlight can cause discomfort and pain in the eyes, leading individuals to squint or shield their eyes from light sources.

Discharge from the Eyes

A thick, sticky discharge from the eyes, especially upon waking up, is a characteristic symptom of bacterial conjunctivitis. This discharge is often yellow or greenish in color and can causetheeyelidsto sticktogether.Viral conjunctivitismayalso causeawateryor clear discharge from the eyes[17,18].

Gritty Sensation

Some individuals withflu in eyes may experience a gritty or sandy sensation in their eyes, as if there is debris present. This feeling of grittiness is often associated with the inflammation of the conjunctiva and can be bothersome.

Crusting of Eyelids

In cases of bacterial conjunctivitis, the discharge from the eyes may dry and harden overnight, leading to the formation of crusts around the eyelids. Upon waking up, individuals may find it difficult to open their eyes due to the presence of these crusts.

Swelling of Eyelids

Swelling of the eyelids is a possible symptom of eye flu, especially when caused by allergies. Allergic conjunctivitis can lead to eyelid edema, making the eyes appear puffy and swollen.

Discomfort While Blinking:

People with eye flu may experience discomfort or pain while blinking due to the inflammation of the conjunctiva. Blinking can exacerbate the irritation and cause[19]. further discomfort**.**

Eye Discharge Contagiousness:

The contagiousness of flu in the eyes depends on its underlying cause. Viral and bacterial conjunctivitis are highly contagious and can spread from person to person through direct contact or exposure to respiratory droplets. Allergic conjunctivitis, on the other hand, is not

contagious and does not spread from person to person.

Diagnosing eye flu, also known as conjunctivitis, involves a comprehensive eye examination and a thorough assessment of the patient's symptoms and medical history. Since eye flu can be caused by various factors, including viral or bacterial infections, allergies, or exposure to environmental irritants, determining the underlying cause is crucial for effective treatment. In this article, we will explore the diagnostic process for eye flu and the tests that may be performed to identify the specific type of conjunctivitis[19].

Duration: The duration of eye flu can vary depending on the cause. Viral conjunctivitis typically resolves on its own within a week or two, while bacterial conjunctivitis may require antibiotic treatment. It's important to practice good hygiene, avoid touching your eyes, and seek medical advice.

If you suspect you have eye flu, symptoms are severe or persistent, as certain forms can cause more serious complications if left untreated[20].

Fig No.4 :- Symptoms of Eye Flu And Pink Eye[64]

Self-Prevention of Viral Conjunctivitis:

Avoid Rubbing/Rubbing Your Eyes: By keeping one's hands away from the eyes, one reduces the risk of introducing germs into the area of the eyes.

Sterilise Common Services : Sterilise services such as doorknobs, light switches, and items used in common regularly to prevent infection

Avoid Scratching Your Eyes : Scratching may result in further irritation of the eye and spread the infection to the other eye.

Protective Eyewear : In case you are working in a setting where chances of acquiring this infection are high, protective eyewear would prevent your eyes from external irritants or infective organisms.

Stay away : Keep away from the infected person who has conjunctivitis to reduce your chances of getting the infection.

Maintain Proper Hygiene with Contact Lenses : Clean and store the lenses as instructed to avoid eye flu and other infections

Prescribed Medications : If prescribed eye drops or ointments, use them as directed by your healthcare provider.

Seek Medical Advice : If you suspect an eye infection or experience persistent symptoms, consult a healthcare professional for proper diagnosis and treatment.

Vaccination : For certain types of eye infections, like viral conjunctivitis caused by adenovirus, vaccination can help prevent outbreaks.

Wash Your Hands : The simplest and most effective way of preventing the eye flu from spreading due to a virus or bacteria is frequent handwashing[21].

Precautions for Eye Flu :

1) Frequent handwashing with soap and water prevents virus transfer to your eyes.

2) Avoid touching your eyes with unwashed hands to prevent introducing viruses to thesensitive eye area.

3) Use clean towels and avoid sharing personal items like towels or eye makeup in publicspaces such as gyms or swimming pools.

4) You should avoid close contact with individuals having eye flu symptoms to reduce the riskof transmission.

5) You can cover your mouth and nose while coughing or sneezing to prevent the spread ofviruses.

6) Regularly clean and sanitise the items that come into contact with your face[22,23].

Transmission of eye flu :-

Eye flu," often referred to as viral conjunctivitis, is primarily caused by viruses such as adenovirus, but it can also be triggered by other viruses like herpes simplex or enterovirus. The transmission of eye flu occurs in several ways, as it is highly contagious. Here are the key ways it spreads:

Direct Contact :

Touching the eyes: The most common mode of transmission is through direct contact with the infected person's eye secretions (e.g., tears, mucus). If someone with viral conjunctivitis touches their eyes and then touches surfaces, they can transfer the virus to objects that others might touch (like door handles, phones, or shared surfaces). Hand- to-eye contact: If a person touches an infected surface (like a doorknob or towel)and then touches their own eyes, they can transfer the virus.

Airborne Transmission (Less Common) :

Aerosolized droplets: In certain cases, especially in crowded places like schools or hospitals, the virus can be transmitted through tiny droplets in the air when an infected person coughs or sneezes. However, this is less common for eye flu than for respiratory infections.[24].

Contaminated Surfaces (Fomites) :

The virus can survive on surfaces for hours or even days, depending on the environment (humidity, temperature). If you touch an infected surface and then touch your face, particularly your eyes, nose, or mouth, you can become infected.

Shared Items :

Towels, makeup, and contact lenses: Sharing personal items, especially towels, makeup, or contact lenses, can lead to the spread of viral conjunctivitis. Contaminated towels or handkerchiefs are especially common vectors[25].

Close Contact and Crowded Places :

Schools and daycare centers: Places where people are in close contact increase the risk of transmission. The virus can spread rapidly in such settings due to shared spaces, surfaces, and close interaction. Swimming pools: In rare cases, pools that are not well-maintained (with improper chlorination) can also be a source of infection.[26,27]

Eye Flu in Newborns :

Vertical transmission: If a mother has viral conjunctivitis, it can be transmitted to the baby during childbirth. This is especially a concern with the herpes simplex virus[28].

Diagnosis of Eye flu disease: -

The first step in diagnosing eye flu is A detailed eye examination conducted by an eye care professional, such as an optometrist or ophthalmologist. During the examination, the doctor Will:

Check Visual Acuity :

Assess the Patient's visual acuity to determine If there are any changes in vision.

Inspect the Conjunctiva :

Examine the conjunctiva for signs of Inflammation, redness, or swelling

Observe the Eyelids:

Check For any crusting, swelling, or Discharge on the eyelids.

Evaluate the Cornea:

Inspect the Cornea for any abnormalities or Signs of infection .

Measure Pupil Reactions:

Assess The pupils' responses to light to ensure they are functioning Properly.[29,30]

Conjunctival swab:

A sample taken from the eye's surface can be analyzed in a laboratory to confirm the presence of the virus.

Polymerase Chain Reaction (PCR) test :

Used to identify the specific virus,especially in outbreaks or atypical cases.

Viral culture :

Though less common today, it can help grow and identify the virus causing the infection[31].

Preventive measures :

- Never touch your eyes without reason: Never contact your eyes without reason. Throughout the day, be careful not to touch your face without a reason.
- Use artificial tears: Using artificial tears can help prevent dry eyes and other eye problems.
- Following general hygiene precautions is advised. When returning from outside, wash your hands.
- Try to keep distance from any members of your family who have the eye flu, he advised[32].
- Use dark goggles, avoid swimming, avoid close contact with others, and don't touch your eyes," he advised. Children should also skip a few days of school to prevent the conjunctivitis from spreading to other classmates.
- Stay away from crowded areas and refrain from touching commonplace items like railings or handles[36].

Additional tests to confirm the diagnosis and identify the specific Type of conjunctivitis :-

Depending on the examination findings and medical history, the eye care professional may conduct additional tests to confirm the diagnosis and identify the specific type of conjunctivitis:

Eye Swab: In cases where bacterial Conjunctivitis is suspected, a Swab of the eye discharge may Be taken to identify the causative Bacteria and determine the most Appropriate antibiotic treatment.

Allergy Testing : If allergic Conjunctivitis is suspected, Allergy testing may be performed to identify the specific allergens Triggering the reaction.

Fluorescein Staining : This test Involves placing a special dye Called fluorescein on the eye's Surface to detect corneal abrasions or other injuries that may cause Similar symptoms to eye flu[37].

Tear Film Evaluation : Tear Film tests may be conducted to Assess tear production and the Stability of the tear film, which Can help diagnose dry eye- related Conjunctivitis [39].

Medical History:

The eye care professional will also take a detailed medical history, including information about :

Symptoms: The patient will be asked about their symptoms, including the onset, duration, and severity of eye discomfort, redness, itching, or discharge Recent.

Illness : Information about any recent illnesses or exposure to infectious individuals maybe relevant in identifying viral or bacterial causes.

Allergies : Allergies to specific substances, such as pollen or pet dander, will benotedto assess thepossibility of allergic conjunctivitis.

Contact Lens Use : If the patient wears contact lenses, the eye care professional will inquire about lens hygiene and frequency of use[40].

Medication for treatment of eye flu : -

Antimicrobial drugs: can be used to treat eye infections caused by microorganisms like bacteria or viruses. The choice of antimicrobial drug depends on the underlying cause of theeye infection: 1. Bacterial Conjunctivitis: If the eye infection is caused by bacteria, antimicrobial drugs, typically antibiotics, can be prescribed. Antibiotics work by targeting and killing the bacteria responsible for the infection. Common antibiotics used for bacterial conjunctivitis include eye drops or ointments containing chloramphenicol, gentamicin, or ciprofloxacin[41].

Table 1 : Anti microbial drugs

Drug	Brand
Natamycin	Naracyn

Ganiclouir	Zirgan
Trifluiridine	Viroptic
Cystamine	Cystarn

Antiviral medication :- In severe cases of viral conjunctivitis, doctors may prescribe antiviral medications to help manage the infection. Some common examples include Acyclovir, and Ganciclovir[42]. Viral Conjunctivitis: Antimicrobial drugs are generally not effective against viral infections, including viral conjunctivitis. Viral eye infections are typically self-limiting and resolve on their own. In such cases, treatment focuses on managing symptoms and preventing the spread of the virus through good hygiene practices.

Artificial Tears or Lubricants :- Over-the-counter artificial tears are effective in alleviating dryness and irritation in the eyes. These drops may be applied multiple times throughout the day to maintain moisture and comfort. Common formulations include Carboxy Methyl Cellulose and Sodium Carboxymethyl Cellulose[43].

Antihistamines or Decongestants :- If allergies are causing the eye flu, antihistamine eye drops or oral medicine can help reduce symptoms by calming the allergic reaction.Decongestant drops can also be used to ease redness and swelling. Examples include combination medicines like Alcaftadine + Benzalkonium Chloride.

Steroid Eye Drops : In cases of severe eye inflammation, steroid eye drops may be given to reduce swelling and discomfort[44,45].

Table 2 : Steroid Eye Drops

Drug	Brand
Fluoromrtholone	fml
Loteprednol	Alrex 0.2%
Rimexolone	vexol

Antibiotic Eye Drops :

Croak Eye Drops : Composition: Ciprofloxacin Eye Drops: Ciprofloxacin ophthalmic solution is used to treat bacterial eye diseases such as conjunctivitis and corneal ulcers.

Flute-SP Eye Drops : Composition: Tobramycin and Fluorometholone Ophthalmic Solution. Tobramycin belongs to an antibiotic family that aids in the prevention of bacterial formation and development by inhibiting the synthesis of key proteins required by bacteria operate in the eye[46].

Spec ox Eye Drops : Composition: Moxifloxacin Eye Drops: Moxifloxacin is an antibiotic that fight.

Moxigrev-D Eye Drops: Composition: Moxifloxacin and Dexamethasone Eye Drops: Bacterial eye infections are treated with Moxifloxacin and Dexamethasone Eye Drops. Moxifloxacin belongs to a class of medications known as antibiotics, which serve to inhibit bacterial cells from proliferating and mending[47].

Levokap Eye Drops : Composition: Levofloxacin eye drops: Levofloxacin, which is used to treat bacterial infections in the eyes, helps to reduce symptoms of infections by inhibiting the development of germs.

Divicol Eye Drops : Composition: Chloramphenicol eye drops: Chloramphenicol is an antibiotic used to treat bacteria that cause eye infections. This works by killing the germs that cause inflammation, swelling, corneal .damage, itching, and a range of other issues. This does not directly kill the bacteria; rather, it works by inhibiting.

Besivance Eye Drops : Composition: Besifloxacin Ophthalmic solution: Besifloxacin is a medication that, is used to treat bacterial conjunctivitis (pinkeye; infection of the membrane that covers the outside of the eyeballs and the inside of the eyelids). Besifloxacin belongs to a class of drugs known as fluoroquinolone antibiotics. It kills the germs that cause conjunctivitis[48].

Table 3: Antibiotic Eye Drops

Medication	Phonetic Name	Brand Name	Top Color
Moxifloxacin Tobramycin Ciprofloxacin	Mox-e-FLOX-a- sin Toe-BRAH-my- sin Sip-ro-FLOX-a- sin	Vigamox Ciproflox	Tan
Prednisolone Difluprednate	Pred-NIS-oh-lone Die-FLU-pred- nate	Pred Forte Durezol	Pink Or White
Ketorolac Bromfenac Nepenfenac	KEE-toe-ROLEak BROM-fen-ak Neh-PEF-an-ak	Acular Bromday Nevanac	Grey

Home remedies for eye flu :-

Cold Compress :

How it helps : A cold compress can soothe irritation, reduce swelling, and relieve itching and redness.

How to use : Soak a clean washcloth in cold water or refrigerate a gel eye mask. Gently place the compress over your closed eyelids for 5–10 minutes.

Repeat several times a day as needed.[49].

Warm Compress :

How it helps : A warm compress can help relieve discomfort if your eyes are particularly dry or gritty.

How to use : Soak a clean cloth in warm (not hot) water.

Place it over your eyes for 5–10 minutes to help loosen any crust or discharge. Make sure the cloth is not too hot to avoid burning the skin.

Saline Solution (Saltwater Rinse) :

How it helps: A saline rinse can help flush out irritants, bacteria, or discharge from your eyes.

How to use : Mix 1 teaspoon of salt in 1 cup of clean, lukewarm water.

Use a clean dropper to place a few drops of the solution into your eyes.You can also use sterile saline solution from the pharmacy (often sold as eye wash).[50]

Artificial Tears or Lubricating Eye Drops :

How it helps: These can help soothe dry, irritated eyes and reduce the sensation of grittiness or burning.

How to use: Use over-the-counter preservative-free artificial tears throughout the day. Be sure to choose an option that doesn't contain medications (such as decongestants) to avoid further irritation.

Honey and Warm Water :

How it helps: Honey has natural antimicrobial and soothing properties. It can help reduce inflammation and promote healing.

How to use : Mix 1 tablespoon of raw honey with 1 cup of warm (not hot) distilled or sterile water.

Stir until the honey dissolves and use a clean cotton ball to gently apply the mixture to the eyelids.

Leave it on for a few minutes, then rinse gently with water.

Note : Use this remedy once or twice a day to help soothe and heal.[51].

Aloe Vera Gel :

How it helps : Aloe vera has anti-inflammatory properties and can soothe irritated eyes. How to use : Use fresh aloe vera gel (preferably from an organic plant).

Apply a small amount of aloe gel to the eyelid or under-eye area, avoiding direct contact with the eyes. Let it sit for 10–15 minutes and then rinse with lukewarm water Note: Do a patch test first to ensure you're not allergic[52].

Avoid Rubbing : Avoid rubbing your eyes as this can aggravate conjunctivitis symptoms further and worsen them.

Avoid Irritants : Avoid smoke, dust and other sources that could aggravate symptoms.

Proper rest and sleep : Allow your body to recover while strengthening your immune system to combat this eye infection.

Maintain Hygiene : Maintaining proper hygiene at home will prevent spreading this eye infection to other family members[53,54].

Management of Viral Conjunctivitis :

To enhance patient comfort and avoid any scar formation, a membrane or pseudo- membrane that is present can be peeled at the slit lamp. With a jeweler's forceps or a cotton swab dipped in topical anesthetic, these membranes can be peeled. Steroids applied topically can aid in the relief of symptoms. However, they may also lengthen the time that the virus is excreted Patients should be made aware that they should avoid going to work or school until their symptoms go away because they are very contagious. While using steroids, they may continue shed the virus even though there are no outward signs of an infection. Patients who have reduced vision as a result of subepithelial infiltrates or severe conjunctival infections that cause greater discomfort than is normal should only get steroids.[55,56]

Unspecific disinfectant povidone-iodine is a promising therapeutic treatment for adenoviral conjunctivitis[57].

This antiseptic solution, which is affordable and readily accessible, is utilized as part of the aseptic setup for ocular surgery. Although it can kill external organisms, it has no impact on intracellular organisms. Due to the fact that its mode of action is not immunologically dependent, it does not cause drug resistance. Infants with adenoviral conjunctivitis who received a single dosage of 2.5% povidone-iodine experienced less severe symptoms and a quicker recovery without experiencing any unfavourable side effects[58].

Epithelial herpes simplex keratitis contraindicates the use of topical corticosteroids alone because they prolong viral shedding and infection. Corticosteroids have shown high tolerance and efficacy in treating the inflammatory and infectious components of conjunctivitis when combined with an anti-infective[59,60].

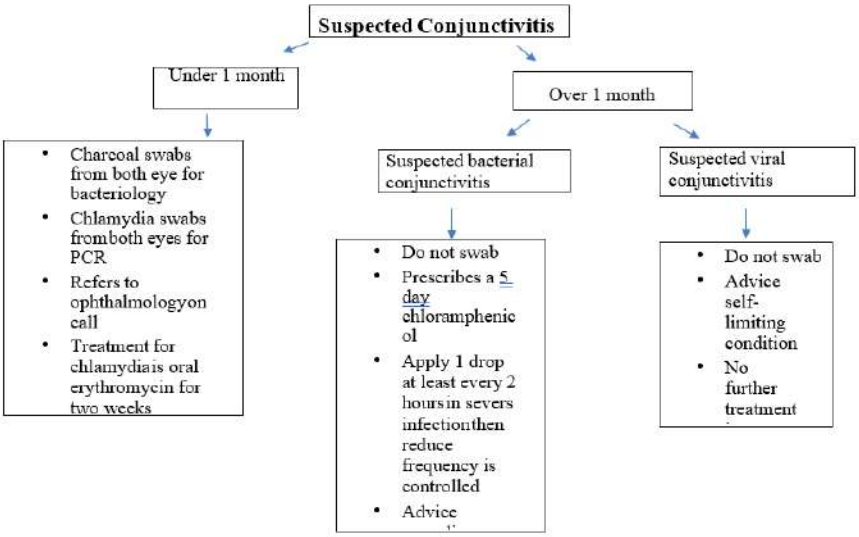

Fig no.5 Management of eye flu

CONCLUSION:

Eye flu is a prevalent condition, particularly during the rainy season. It is generally not harmful and typically resolves within a week without causing any lasting damage to the eye. The symptoms can be effectively managed by wearing dark goggles and usinganti- allergic eye drops as directed by your physician, usually 3 to 4 times daily. Conjunctivitis is a prevalent ocular condition that can arise from multiple causes and present with a range of symptoms. Identifying the specific type of conjunctivitis is vital for effective treatment. Although medical treatment is important, home care remedies can also play a supportive role in the

recovery process. It is essential to prioritize the care of your eyes; therefore, remain knowledgeable and vigilant regarding their health.

REFERENCES

1. Dhavan Sakshi, Pawal Rutuja. A review article on eye flu disease. International journal of novel research and development [IJNRD] ijnrd.org 8 august 2023 | ISSN: 2456- 4184.
2. Harjeet Kumar, Roshan Kumar, Prachi Sood. A review on most Opthalmic viral disease conjunctivitivs [eye flu] journal for research in applied sciences and biotechnology. August 2023 || PP . 96-100.
3. Yiguo Zhang, huimin deng, lina Zhu, Yu wang. Eiectroacupuncture alleviates lps-induced ards through a7 nicotinic acetylcholine receptor – mediated inhibition of frrroptosis. 10 february 2022 fimmu 2022.832432.
4. Hu, K., Patel, J., Swiston, C., & Patel, B. C. Ophthalmic manifestations of coronavirus (COVID-19). In StatPearls [Internet]. StatPearls Publishing. 2022.
5. Amir A. Azari, MD; Neal p. Barney,MD conjunctivitis A systematic review of diagnosis and treatment http ://jamanetwork.com by university of Virginia. October/30/2023.
6. P D. Gupta, eye infection: a review founder director iiadevi cataract and IOL research centre, Ahmadabad, India. Journal of ophthalmology and vision care, April 21 2021 Doi; 04.2021/1,1007.
7. Mahoney. M. J.. Bekibele, R., Notermann, S. L.. Reuter. T. G., &Borman-Shoap. E. C. (2023). Pediatric Conjunctivitis: A Review of Clinical Manifestations, Diagnosis, and Management. Children, 10(5), 808.
8. Binder AM, Biggs HM, Haynes AK, Chommanard C, Lu X, Erdman DD, Watson JT, Gerber SI. Human Adenovirus Surveillance - United States, 2003-2016. MMWR Morb Mortal Wkly Rep. 2017 Oct 06;66(39):1039-1042.
9. Alfonso SA, Fawley JD, Alexa Lu X. Conjunctivitis. Prim Care. 2015 Sep;42(3):325-45
10. Li J, Lu X, Jiang B, Du Y, Yang Y, Qian H, Liu B, Lin C, Jia L, Chen L, Wang Q. Adenovirus-associated acute conjunctivitis in Beijing, China, 2011-2013. BMC Infect Dis. 2018 Mar 20;18(1):135.
11. Sow AS, Kane H, Ka AM, Hanne FT, Ndiaye JMM, Diagne JP, Nguer M, Sow S, Saheli Y, Sy EHM, De Meideros Quenum ME, Ndoye Roth PA, Ba EA, Ndiaye PA. [Senegalese experience with acute viral conjunctivitis]. J Fr Ophtalmol. 2017 Apr;40(4):297-302.
12. P D. Gupta, eye infection: a review founder director iiadevi cataract and IOL research centre, Ahmadabad, India. Journal of ophthalmology and vision care, April 21 2021 Doi; 04.2021/1,1007.
13. Mahoney. M. J.. Bekibele, R., Notermann, S. L.. Reuter. T. G., &Borman-Shoap. E. C. (2023). Pediatric Conjunctivitis: A Review of Clinical Manifestations, Diagnosis, and Management. Children, 10(5), 808.
14. Dr. Nikhil s. sardar in eye [ophthalmology] hospital in mumbai, India . Eye flu [conjunctivitis]: symptoms types, causes and tratment Aug 08 2023
15. Baj, J., Forma, A., Teresińska, B., Tyczyńska, M., Zembala, J.. Januszewski. J.. & Teresiński, G. (2022). How Does SARS-CoV-2 Affect Our Eyes- What Have We Learnt So Far about the Ophthalmic Manifestations of COVID-192. Journal of clinical medicine, 11(12), 3379.
16. Dr. Anita Seti eye flu : symptoms precaution and at- home remedies . https:/www. Maxheaithcare. In/ blogs/eye - flu conjunctivitis. Aug 20 2024

17. Sagar kishor savale eye flu: symptoms, prevention and treatment https:/www.researchgate.net / publication/373167939. Aug 2023.
18. Yash Srivastav madhaw Kumar a review of the eye flu or viral conjunctivitis and its associated treatment management and challenges. Internationai journal of pharmaceutical and clinical research. Doi 10.3354/26647591 aug 2023.
19. Dr. Anita sethi in eye ceare opthalmology eye flu : sysmptome precaution and at home renedies aug 2302024.
20. Zhang, Y., Zheng, L., Deng, H., Feng, D., Hu, S., Zhu, L. & Lv, X. (2022). Electroacupuncture alleviates LPS-induced ARDS through a nicotinic acetylcholine receptor-mediated inhibition ferroptosis. Frontiers in Immunology, 13, 832432.
21. kamal pant , b. Singh eye flu sing symptoms prevention and control from infection. International journal of medical and allied health sciences http://www.ijmahs.org/©2021. 29-08-2023.
22. Ding, N., Wei, Q., Deng, W., Sun, X., Zhang, J., & Gao, W. (2021). Electroacupuncture alleviates inflammation of dry eye diseases by regulating the a7nAChR/NF-KB signaling pathway. Oxidative Medicine and Cellular Longevity, 2021
23. Hu, K., Patel, J., Swiston, C., & Patel, B. C. (2022). Ophthalmic manifestations of coronavirus (COVID-19), In StatPearls (Internet). StatPearls Publishing.
24. Al-Namach, M. (2022), Ocular manifestations of COVID-19. Therapeutic Advances Ophthalmology, 14, 25158414221083374.
25. Mechel, E., Trinh, M., Kodsi, S., Hymowitz, M.. Kainth, M. K., & Lee. A. M. (2021). Ophthalmia neonatorum as the presenting sign of SARS-CoV-
26. H orimoto T, Kawaoka Y. Influenza: lessons from past pandemics, warnings from current incidents. Nat Rev Microbiol. 2005; 3:591-600. [PubMed: 16064053
27. Pandule roshani, Mahesh kshirsagar Shri amolak Jain Vidya prasarak mandal's college of pharmaceutical sciences and research centre kada. Ijnrd.orj (August 2023).
28. Dr. Sabariraja subramanian Dr. Sr ameerkhan babu eye flu way to conquer with general and homoeopathic measures. November 2023.
29. Tellier R. Aerosol transmission of influenza A virus: a review of new studies. R Soc Interface. 2009; 6(suppl 6):$783-90. [PubMed: 19773292]
30. Xie X, Li Y, Chwang AT, Ho PL, Seto WH. How far droplets can move in indoor environments-revisiting the Wells evaporation-falling curve. Indoor Air. 2007; 17:211- 25. [PubMed: 17542834)
31. Hayden, FG, Ison, MG. Respiratory viral infections. In: Dale, DC, Feldman, DD, editors. ACP medicine, 2006 edn, Section Chapter XXV. New York, NY: WebMD Professional Publishing: 2006.
32. Britton PN, Dale RC, Blyth CC, et al. Influenza-associated encephalitis/encephalopathy identified by the Australian Childhood Encephalitis Study 2013-2015. Pediatr Infect Dis J. 2017; 36:1021-26. [PubMed: 28654561]
33. Dr. Sabariraja subramanian Dr. Sr ameerkhan babu eye flu way to conquer with general and homoeopathic measures. November 2023.
34. Agra Health Dept Issues Advisory To Schools After Rise In Eye Flu Cases (outlookindia.com).
35. Jessica A Belser, R Ryan Lash, Shikha Garg, etal. Lancet Infect Dis. 2018 July: 18(7): e220-e227. doi:10.1016/S1473-3099(18)30102-6.
36. Harrison's Principles of Internal Medicine

37. Harrison's Principles of Internal Medicine.
38. Dr. Anita Seti eye flu : symptoms precaution and at- home remedies . https:/www. Maxheaithcare. In/ blogs/eye - flu conjunctivitis. Aug 20 2024.
39. Homeopathic Materia Medica" 3 by Boericke.
40. Dr. Mandeep Chadha. Eye flu [conjunctivitis] causes symptoms treatment and home remedies [truemeds] 19 sep 2024.
41. https://www.yatharthhospitals. com/
42. Quick Bedside Prescriber IN SHINGHAL
43. https://w W nanavatimaxhospital.org/
44. https://www.felixhospital.com/
45. https://www.netmeds.com/ . HOMPATH software
46. Dewey WA Practical Homoeopathic Therapeutic
47. Dewey WA Practical Homoeopathic Therapeutics
48. Mr. Sagar khishor savale, technology transfer scientist shirpur 425405 Ms India eye flu symptoms prevention and treatment. 17 august 2023.
49. https://www.yatharthhospitals. com/
50. https://www.felixhospital.com/
51. Dewey WA Practical Homoeopathic Therapeutics
52. Trinavarat A, Atchaneeyasakul LO. Treatment of epidemic keratoconjunctivitis with 2% povidone-iodine: a pilot study. J Ocul Pharmacol Ther. 2012 Feb;28(1):53-8.
53. https://www.savesightcentre.com/eye-flu.php
54. https://www.medkart.in/blog/eye-flu-conjunctivitis
55. Usher P, Keefe J, Crock C, Chan E. Appropriate prescribing for viral conjunctivitis. Aust Fam Physician. 2014 Nov;43(11):748-9.
56. Shiota H, Ohno S, Aoki K, Azumi A, Ishiko H, Inoue Y, Usui N, Uchio E, Kaneko H, Kumakura S, Tagawa Y, Tanifuji Y, Nakagawa H, Hinokuma R, Yamazaki S, Yokoi N. [Guideline for the nosocomial infections of adenovirus conjunctivitis]. Nippon Ganka Gakkai Zasshi. 2009 Jan;113(1):25-46
57. Özen Tunay Z, Ozdemir O, Petricli IS. Povidone iodine in the treatment of adenoviral conjunctivitis in infants. Cutan Ocul Toxicol. 2015 Mar;34(1):12-5.
58. Kovalyuk N, Kaiserman I, Mimouni M, Cohen O, Levartovsky S, Sherbany H, Mandelboim M. Treatment of adenoviral keratoconjunctivitis with a combination of povidone-iodine 1.0% and dexamethasone 0.1% drops: a clinical prospective controlled randomized study. Acta Ophthalmol. 2017 Dec;95(8):e686-e692.
59. Faraldi F, Papa V, Rasa D, Santoro D, Russo S. Netilmicin/dexamethasone fixed. combination in the treatment of conjunctival inflammation. Clin Ophthalmol. 2013;7:1239-44.
60. https://www.researchgate.net/publication/373903588
61. https://images.app.goo.gl/CAgBmjYr76T5i5uv9
62. https://images.app.goo.gl/fmRGYrkSLcz8HAh5922
63. https://images.app.goo.gl/AzkD8yGdfRGpCEvX6
64. https://images.app.goo.gl/xreRLXi

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