Medical Science Journal for Advance Research

Vol. 4 , No. 3 , August 2023
e-ISSN: 2774-4892

A Viral Study On Conjunctivitis, Its Causes, Symptoms And Treatment Methods

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ABSTRACT

Background: *The virus has a very small body made of protein and nucleic acid, which is what gives it its size. It can pass through filters known as filterable filters because they stop the passage of microorganisms like bacteria. The ability to bypass filters, which is specific to viruses, is the only feature to which the name alludes. Adenoviruses and viruses in general are responsible approximately 80% of cases of acute conjunctivitis overall. Herpes and enterovirus are frequent causes of disease. In general, viral conjunctivitis spreads very easily and is widespread. And to control the spread of the disease and this type of virus, it is very necessary to diagnose diseases very quickly, strictly and strictly implement the laws of hand washing, and sterilize surfaces with sterilizers and alcohol. Swelling of the lymph node in front of the ear can sometimes occur when infected with the aforementioned virus.*

Keywords: Conjunctivitis, Adenoviruses, Enterovirus, Symptoms And Treatment Methods

Article Information

Received: June 26, 2023; Revised: July 30, 2023; Online: August , 2023

INTRODUCTION

One of the most frequent eye conditions observed at ophthalmic hospitals' emergency rooms is acute conjunctivitis. Acute conjunctivitis can be brought on by germs, allergens, viruses, or parasites, although about 80% of cases are brought on by viruses. Wearing contact lenses, a known risk factor for bacterial keratitis, can be one of the causes of this condition. Contact lens deterioration puts the eye in grave danger and results in bacterial keratitis. It has been demonstrated in the past that monthly contact lenses have an impact and raise the risk of eyesight loss [1].

Additionally, allergies and conjunctivitis brought on by toxins are the most typical causes of conjunctivitis. Viral conjunctiviti can take many different forms, including epidemic keratoconjunctivitis (EKC), pharyngeal and conjunctival fever (PCF) from adenoviruses, acute hemorrhagic conjunctivitis (AHC) from enterovirus and Coxsackievirus, and herpetic conjunctivitis from herpes simplex virus (HSV). The varicella-zoster virus, abbreviated VZV [2]. According to some sources, 75% of instances of different eye illnesses

https://doi.org/10.46966/msjar.v4i3.141

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are caused by viral conjunctivitis [3]. Redness, congested blood vessels in the eye, yellowish-creamy ocular discharge, pain that interferes with concentration, photophobia, and pseudomembranes are all signs of viral conjunctivitis. Due to the expenses Conjunctivitis has a significant negative economic and social impact because of visits to the emergency room or general practitioner, diagnostic procedures, prescription medicines, and time away from work or school. The cost of prescribing drugs for viral conjunctivitis is one of the greatest costs for any healthcare system [4]. Viral conjunctivitis occasionally referred to as a clinical EKC and may manifest as EKC in clinical findings. EKC infection is common in the summer and EKC infectivity is very strong. Every year, a large number of EKC-infected people are monitored in Japan. Although the majority of viral conjunctivitis cases resolve on their own, patients may occasionally notice a decline in their quality of life due to symptoms including blurred vision and a loss of visual acuity [5, 6, 7]. One million persons in Japan are thought to get EKC, an adenovirus-induced form of acute conjunctivitis, each year [8]. In tissue cultures of human adenoids, Rowe et al. initially discovered adenoviruses in 1953 [9]. Adenoviruses are non-enveloped, medium-sized (70–100 nm) viruses with an icosahedral nucleocapsid and a double–stranded, 34–36 kbp linear DNA genome [10]. Fibers protrude from the peak (penton base) of the icosahedral adenovirus [10]. With the exception of the penton base, all triangle faces are created by the configuration of hexon protein groups [11].

Infectious gastroenteritis [10,12], cystitis [10], myocarditis [10], meningoencephalitis [10], and pneumonia [13] are all conditions brought on by adenoviruses. From A to G, they are divided into seven different species [14]. EKC is primarily brought on by adenoviruses of species D [15]. Despite the fact that adenovirus types 8, 37, 53, 54, 56, 64, and 85 [16, 17] can cause EKC, type 8 adenovirus is the most common culprit [18]. Particularly, type 54 infection is only seen in Japan, and these EKC cases are regarded as severe [19,20,21]. Because viral strains have been isolated and distinguished from healthy persons, genetic recombination will eventually lead to the discovery of a new type of adenovirus.

Pathophysiology of conjunctivitis

Although there are numerous etiologies for conjunctivitis, allergies or infections account for the majority of instances. A conjunctival infection brought on by bacteria or viruses is known as infectious conjunctivitis. There are various sources that suggest that infectious microorganisms or non-infectious irritants are the causes of allergic conjunctivitis. Airborne antigens may also play a role in the development of allergic conjunctivitis. Conjunctival vessels are injected or dilated as a result of

this irritation or infection, which causes the familiar redness, hyperemia, and edema of the conjunctiva. There is involvement of the whole conjunctiva and frequently exudate as well. The causative agent affects the discharge's quality differently. In bacterial conjunctivitis, typical flora like staphylococcus, streptococcus, and Corynebacterium infiltrate the surface tissues of the eye. The conjunctiva's epithelial layer serves as the body's main line of defense against infection. Any breach in this barrier can lead to an infection. [22] .

The type of conjunctivitis

Viral Conjunctivitis

Adenoviruses Up to 90% of cases of viral conjunctivitis in children are caused by adenoviruses. Acute follicular conjunctivitis with fever, pharyngitis, and periauricular lymphadenopathy are the symptoms of PCF brought on by HAdV types 3, 4, and 7. Serotypes 8, 19, and 37 are frequently associated with epidemic keratoconjunctivitis (EKC), the most severe adenovirus-related ocular illness. Viral replication may affect the anterior stroma and epithelium of the cornea, causing subepithelial infiltrates and superficial punctate keratopathy. Povidone-iodine 2% monotherapy has been demonstrated to reduce symptoms.[23]

Treatment and Prevention

According to calculations, there is a 10% to 50% chance that someone else will catch the virus that causes conjunctivitis.6,14 According to one study, 46% of infected people showed positive hand swab cultures, showing that the virus can spread by direct touch with contaminated fingers, medical equipment, swimming pool water, or private things. Due to the high rates of transmission, it has been suggested that infected patients be isolated from the rest of the clinic, wash their hands frequently, and disinfect their equipment thoroughly. A range of 5 to 12 and 10 to 14 days, respectively, are predicted for incubation and communicability.[25]

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