

Treatment and Preventive Analysis of 108 Cases of Epidemic Keratoconjunctivitis

Guangli Sun¹, Gang Su^{2}, Yanhui Bai¹, Huiqin Yang¹*

¹Ophthalmology Department, The First Affiliated Hospital of Zhengzhou University, Zhengzhou 450052, Henan Province, China

²Cardiovascular Surgery Department, The First Affiliated Hospital of Zhengzhou University, Zhengzhou 450052, Henan Province, China

ABSTRACT

Objective To explore the treatment method and preventive measures on epidemic keratoconjunctivitis. **Method** There were 108 cases of consultation patients with epidemic keratoconjunctivitis in Ophthalmology Department of The First Affiliated Hospital of Zhengzhou University from January 2015 to September 2015. These patients were given interferon eye drops, ganciclovir eye gel, the alternate eye treatment of tobramycin and dexamethasone eye drop and diclofenac sodium eye drops. The health education was also performed among patients, thus to improve patients recover as soon as possible and prevent the spread of disease epidemics. **Result** Among the 108 cases of patients, there were 101 patients recovered, 7 patients had cornea remained subepithelial round hoary haze, including 2 cases of patients with evident cornea remained subepithelial round hoary haze due to the occurrence of glucocorticoid-induced intraocular pressure, and the tobramycin and dexamethasone eye drops were suspend. The clinical cure rate was 91.79%. There was no pathophoresis to health patients among the 108 patients. **Conclusion** It required the positive keratoconjunctivitis treatment along with the health education, thus could achieve a higher clinical cure rate and control the transmit of the disease spread.

Keywords: *conjunctivitis, keratitis, epidemic, treatment, prevention*

INTRODUCTION

Epidemic keratoconjunctivitis, namely EKC, is a highly infectious and easy occurred fulminant epidemic acute conjunctivitis, commonly known as "Red Eyes". Its pathogenic bacteria was adenovirus 8, 19, 29 and 37 type, and very common in clinical ophthalmology department. There were 108 cases of consultation patients with epidemic keratoconjunctivitis in Ophthalmology Department of The First Affiliated Hospital of Zhengzhou University from January 2015 to September 2015. These patients were given interferon eye drops, Corresponding author: gangsu2015@sina.com

ganciclovir eye gel, the alternate eye treatment of tobramycin and dexamethasone eye drop and diclofenac sodium eye drops. The health education was also performed among patients. The treatment and transmit condition of patients was observed and the promising results was achieved, as reported below:

MATERIAL AND METHOD

General Material

From January 2015 to September 2015, there were 108 case of consultation patients selected from xx department in xx hospital. Totally, there were 195 eyes, including 125 eyes in 70 male patients and 70 eyes in 48 female patients.

There were 89 patients with disease in both eyes. The consultation time was 1 to 5 days after the onset. Patients all had stimulating symptoms, foreign body sensation, itching, water-like secretion and press pain and swelling on lymph node before ears. Patients physical signs were redness on both eyes upper and lower eyelids, eyelid conjunctiva congestion, subconjunctival hemorrhage and lots of follicle appeared on fornix and palpebral conjunctiva. Few patients had pseudomembrane on conjunctiva and speckled epithelial impair on cornea.

Treatment Method

Local drug therapy was applied on all patients. The systemic drug therapy was not taken. Interferon eye drops was adopted to inhibit virus replication, four times per day, 1 drop per time; ganciclovir eye gel was employed for anti-virus treatment, four times per day [1]; tobramycin and dexamethasone eye drops was taken to reduce conjunctival chemosis and prevent corneal impair and other complications, 3 times per day, 1 drop per time, maximum 14 days; diclofenac sodium eye drops was used to reduce stimulation of inflammatory factors released, and improve eye hyperaemia oedema symptoms, 4 times per day, 1 drop per time.

Health Education

Firstly, disease detailed infection pathways was informed. Patients shall frequently wash hands, don't touch or rub eyes. Before eye medicine application, both hands shall be washed; if only one eye got infected, the health eye shall be prevented to get infected. While in sleep, patients shall turn one side which the infected eye was in lower position; Medicine exchanged application was forbidden, along with other things that touched. The hugs or shaking hands were also not allowed; the daily use items shall be used only for one person. The infected eye shall not be bandaged. Secondly, Patients shall not have excessive activity. Sufficient sleep was ensured. It shall to encourage patients have more

rich nutritious food, no stimulation, delicate food, such as fish, egg, fruits and vegetables, in order to enhance patients' disease resistance, improve the healing of keratoconjunctiva.

Observed Efficacy

The continuously observations shall be performed till inflammation disappeared entirely in der slit lamp. The inflammation disappeared time and complication occurrence time shall be recorder as well. The curative effect was divided into fully recovery judgment standard, excellent judgment standard, noneffective judgment standard. In fully recovery judgment standard, all the symptoms and signs shall disappeared, eyelid and conjunctival congestion disappeared, no edema, corneal fluorescein staining was negative. In excellent judgment standard, main symptoms and signs disappeared or decreased, the eyelid and conjunctival congestion reduced, corneal fluorescein staining were negative. In noneffective judgment standard, there was no recovery on the symptoms and signs, even became worse. There were some speckled corneal epithelial impair.

RESULTS

During the 6 weeks of treatment observation time, 179 eyes in 99 cases were cured among the 195 eyes of 108 cases. The cure rate was 91.76%. There were 10 eyes in 6 cases had excellent curative effect, excellent rate was 5.13%. The total effective rate was 96.95%. There were nonefficiency on 6 eyes in 3 patients, the nonefficiency was 3.08%. During the treatment, there were 14 eyes in 7 cases had hoary speckled corneal epithelial impair, the incidence rate was 7.18%. Through continuous treatment, the main symptom and sign mainly disappeared or reduced on 8 eyes in 4 cases, eyelid and conjunctival congestion reduced, and corneal fluorescein staining were negative, the corneal subepithelial hoary haze evidently reduced. There were only 2 eyes in 1 case remained 1~2 hoary speckled corneal epithelial

spots. 6 eyes in 3 patients had obvious corneal impair, as the repeatedly recurrence during treatment. Although the symptoms and sign recovered, there were 4 eyes in 2 cases had glucocorticoid-induced intraocular pressure, the incidence rate was 2.05%. After the suspend of the tobramycin and dexamethasone eye drops application, eye pressure returned to normal level. After 6 weeks observation, 4 eyes in 2 patients had evident corneal subepithelial round hoary haze, the eyesight of 2 eyes in 1 patients dropped apparently.

At the same time, the 108 cases were performed prevention survey. Under the detailed health education, no health people got infected around the patients. The efficacy was achieved on prevent the disease infection.

DISCUSSION

EKC was a common ocular infectious disease, and could occur all the year around. Its main transmission routes were direct touch the infected eye secretions or indirectly touch the infected surface, equipment or solvent. And it could easily cause massive outbreak[2,3]. The disease was with short latency, rapid onset, serious symptom [4,5]. The eye irritation was serious, along with high conjunctival congestion, strong infectivity, widely infectibility. The massive outbreak not only could cause huge economic and social burden, but also cause AHC epidemic transmission between countries [6]. The disease was with self-limitation and no serious complications, and the main symptom were tearing, photophobia, eyelid swelling, congestion, edema, lymph node swelling before ears, foreign object sensation, burning sensation, visual impairment. The serious patents could have pseudomembrane on conjunctiva and corneal impair, and had remained corneal subepithelial continuous haze [7,8]. Related research reported that the incidence rate of EKC on corneal impair under 5 years old children was 55%, and 80% for 7

~ 75 years old patients. If there was no timely effective treatment, most patients could have corneal haze after the recovery of inflammation. Therefore, timely effective treatment shall be taken to avoid corneal complications.

Some scholars proposed that some of EKC had self-limitation, and the special treatment was not required. While, during the clinical observation on 2~4 weeks diseases course, due to the strong infectivity, patients was not comfort to consult the hospital. In order to shorten the disease course and reduce symptoms and corneal impair, patients were required to be carefully be with family members and other people around. This study showed that the antiviral medicine and antibiotics treatment in the early course of the EKC and glucocorticoid eye drops treatment could evidently reduce patients' symptoms, shorten patients' disease course and reduce patients' corneal complication. 195 eyes in 108 patients did not have local eye deterioration. Only 4 eyes in 2 patients had glucocorticoid-induced intraocular pressure, the incidence was 2.05%. After the suspend of tobramycin and dexamethasone eye drops, intraocular pressure return to normal, the total effective rate was 96.95%. The combined application of antiviral anti-infection treatment and hormonal eye drops was the effective treatment methods. Especially, the hormonal eye drops in the early treatment stage could accelerate the eye inflammation subsides recovery, and reduce the possibility of legacy corneal haze.

This paper studied the health edication was evidently important to prevent the epidemic keratoconjunctivitis. The 108 cases of patients did not infect surrounding health people, and achieved good effect to prevent the spread of disease. In the prevention methods, the daily health habits shall be more cautious and hygienic. Soap was used while washing hands. Hands shall kept dry, and avoid to touch eyes. Patients shall avoid to go public area. The

disease had strongest infectivity during the first week after onset. The children patients in kindergarten, children nursery shall stay at home to avoid disease spreadout. The pathogenic virus has resistance to the general disinfectant. During the epidemic period, patients shall avoid to go swimming pool and other public or crowd places. In addition, it was also shall avoid to shake hands with patients, touch the patients used towel, soap, bedding, door handles, tap etc. After the patients recovered, the used quilts, towels shall be washed, and exposed under sunshine completely for further eliminate the infection sources.

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