

Case Report

Management and Treatment of Eye Symptoms of 2019 Novel Coronavirus Pneumonia with Traditional Chinese Medicine: A Case Report

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Abstract

I write to present the case of 2019 novel coronavirus (2019-nCoV) pneumonia with significant eye symptoms at the early stage of the disease. Since December 8, 2019, an epidemic of 2019-nCoV pneumonia has spread rapidly in China as well as progressively to other countries, with World Health Organization (WHO) declaring it a Public Health Emergency of International Concern [1]. As of February 18, 2020, China reported more than 70,000 confirmed cases and over 1800 fatalities. Apart from the devastating respiratory symptoms, there is a possibility of ocular affections in some cases. There are very few reports regarding the eye symptoms caused by 2019-nCoV pneumonia so far. We herein report a patient with obvious eye symptoms at the acute phase of the disease and shared our successful experience in the management and treatment of such disorder with Traditional Chinese Medicine (TCM).

Case

A 30-year-old female patient presented to the fever designated hospital located in Shijingshan District (Beijing) on February 9, 2020 due to “fever with cough for 1 week”. On admission to the hospital, her temperature was 38.8 °C, with cough, yellow sputum and throat congestion, and no other relevant signs or symptoms. She also complained of chest tightness, fatigue and poor appetite. Sticky stool and normal urination were accompanied after interrogation. The tongue diagnosis of Chinese medicine showed red tongue and slightly thick yellow tongue-covering. The pulse diagnosis of Chinese medicine showed rapid pulse. This patient also presented with significant eye symptoms of the left eye including redness and swelling of the eyelid, photophobia, tears, blurred vision and difficulty in opening the eye because of sticky secretions. Best-Corrected Visual Acuity (BCVA) revealed 0.1 logMAR for the right eye and 0.4 logMAR for the left eye. The ophthalmic examination with slit lamp demonstrated eyelid swelling, and subconjunctival splinter haemorrhage of the left eye (Figure 1).



Figure 1: Eye examination on admission showed redness and swelling of the eyelid, photophobia, tears, blurred vision and difficulty in opening the eye because of sticky secretions.

The anterior segment of both eyes was unremarkable, and the lens and the vitreous body were both clear. Chest radiographs obtained on admission showed infiltrations in both lungs with the disappearance of the left costophrenic angle (Figure 2). She was isolated and treated with broad-spectrum antibiotics and supportive therapies. Nasopharyngeal swabs collected from the patient during hospitalization tested positive for 2019-nCoV on real-time RT-PCR assays. Therefore, the diagnosis of “2019-nCoV Pneumonia” was confirmed. The Western medicine diagnosis for her left eye was made as “Conjunctivitis”. The Traditional Chinese Medicine (TCM) diagnosis for her left eye was made as “Bao Feng Ke Re (sudden eye affection due to wind and heat)” because of the exogenous epidemic. After admission to the hospital, she was given Moxifloxacin, Abidolol Hydrochloride, and Lian Hua Qing Wen Granules systematically.



Figure 2: Chest radiographs obtained on admission showed infiltrations in both lungs with the disappearance of the left costophrenic angle.

To relieve the eye symptoms, she was given Levofloxacin Eye Drops (0.3 ml; 6 times per day) and Houttuynia Cordata Thumb Eye Drops (0.3 ml; 6 times per day) for the left eye, after consulting the ophthalmologists in Eye Hospital, China Academy of Chinese Medical Sciences, Beijing, China. Based on the comprehensive TCM diagnosis, the doctor of TCM treatment was to evacuate exopathogenic factors, clear interior heat, and expel toxic factors. The specific components include Lian Qiao (FRUCTUS FORSYTHIAE) 10 g, Jing Jie (HERBA SCHIZONEPETAE) 15 g, Qiang Huo (RHIZOMA ET RADIX NOTOPTERYGII) 10 g, Xing Ren (BITTER APRIOT SEED) 10 g, Bo He (HERBA MENTHAE) 10 g, Huang Qin (SCUTELLARIA BAICALENSS) 12 g, Jin Yin

Hua (FLOS LONICERAE) 15 g, Chai Hu (RADIX BUPLEURI) 10 g, Huo Xiang (CABLIN POTCHOULI HERB) 10 g, Chi Shao (RADIX PAEONIAE RUBRA) 12 g, Fang Feng (RADIX SAPOSHNIKOVIAE) 15 g, Dang Gui (RADIX ANGELICAE SINENSIS) 10 g, Cang Zhu (RHIZOMA ATRACTYLODIS) 15 g, Pei Lan (HERBA EUPATORII) 10 g, Ge Gen (RADIX PUERARIAE) 15 g, Gan Cao (RADIX GLYCYRRHIZAE) 5 g.

Three pairs of this prescription were given (one pair per day, every morning and night) and the it was instructed to be decocted in water for oral dose. After treating for 3 days, the eye symptoms of the patient improved significantly with no eyelid redness and swelling. BCVA showed improvement from 0.4 logMAR to 0.1 logMAR and the subconjunctival splinter haemorrhage didn't occur (Figure 3). Her fever was no longer present on Feb 17, and her clinical condition improved. Laboratory tests showed no abnormalities. Chest radiographs obtained on Feb 17 showed the absorption of inflammation of both lungs with the recognizable left costophrenic angle. Nasopharyngeal swabs collected on Feb 17 also tested negative for 2019-nCoV on real-time RT-PCR assays. She was discharged the next day and instructed to self-quarantine at home.



Figure 3: Eye examination after treatment showed the disappearance of eyelid redness and swelling.

Discussion

The 2019-nCoV pneumonia belongs to the category of “epidemic disease” in TCM [2]. Its pathogenesis can be blamed to “cold”, “dampness”, and “toxin” [3]. Although the disease location is in the lung with mainly the respiratory symptoms, it is closely related to spleen and large intestine according to the traditional theory of syndrome differentiation of concurrent visceral manifestation. In some cases, significant eye symptoms may occur. Currently, there is still a lack of uniform standard for the treatment of eye symptoms of 2019-nCoV pneumonia. Interferon eye drops, houttuynia cordata thumb eye drops, ganciclovir eye drops as well

as ganciclovir gels which aim to work against cytomegalovirus and improve immune deficiency are recommended to treat the affected eyes. However, according to TCM theories, the conjunctiva is affected because of the exogenous epidemic and the interior accumulated heat in the spleen.

According to the characteristics of the pathogenic disease, the eye symptoms can be divided into two phases: exogenous epidemic affection (phase 1, the acute phase) and interior heat-toxin exuberance (phase 2, the progression phase). For those in phase 1, the exogenous epidemic affected the eye, mainly the conjunctiva, the wind and heat hit the eyelids, and the interior heat invades the vessels of the eye. Therefore, the clinical ocular manifestations often include eye pain, photophobia, tears, redness and swelling of eyelids, redness of conjunctiva, and subconjunctiva haemorrhage. Systematic symptoms include aversion to cold, cough, dry throat, fatigue, and chest tightness. TCM consultations might demonstrate the red tongue, thin yellow tongue-covering and floating pulse. The therapeutic method should be evacuation of exopathogenic factors, clearance of interior heat, and evacuation of toxic factors. Recommended prescription is Qu Feng San Re decoction (驱风散热饮子) with modification.

The main components include Lian Qiao (FRUCTUS FORSYTHIAE), Niu Bang Zi (FRUCTUS ARCTII), Qiang Huo (RHIZOMA ET RADIX NOTOPTERYGII), Bo He (HERBA MENTHAE), Da Huang (RADIX ET RHIZOMA RHEI), Chi Shao (RADIX PAEONIAE RUBRA), Fang Feng (RADIX SAPOSHNIKOVIAE), Dang Gui (RADIX ANGELICAE SINENSIS), Zhi Zi (FRUCTUS GARDENIAE), Chuan Xiong (RHIZOMA CHUANXIONG), Gan Cao (RADIX GLYCYRRHIZAE). For those in the second phase, the exuberance of heat-toxin in the spleen accompanied by the affection of the exogenous epidemic attacked the eyes both from the inside and the outside which makes the eye symptoms heavier than the first phase with longer duration. Therefore, the clinical ocular manifestations often include eye pain, hot tears with sticky secretions redness and swelling of eyelids as well as conjunctiva, subconjunctiva haemorrhage, and vitreous opacities. Systematic symptoms include consistent high body temperature, cough, yellow sputum, bloating and constipation.

Recommended prescription is Xie Fei decoction (泻肺饮) plus Pu Ji Xiao Du decoction (普济消毒饮) with modification. The main components include Shi Gao (GYPSUM FIBROSUM), Huang Qin (SCUTELLARIA BAICALENSIS), Niu Bang Zi (FRUCTUS ARCTII), Huang Lian (COPTIDIS RHIZOMA), Zhi Zi (FRUCTUS GARDENIAE), Bo He (HERBA MENTHAE), Da Huang (RADIX ET RHIZOMA RHEI), Chi Shao (RADIX PAEONIAE RUBRA), Fang Feng (RADIX SAPOSHNIKOVIAE), Sang Bai Pi (CORTEX MORI), Jing Jie (HERBA SCHIZONEPETAE), Bai Zhi (RADIX ANGELICAE DAHURICAE), Jie Geng

(RADIX PLATYCODONIS), Ban Lan Geng (RADIX ISATIDIS), Lian Qiao (FRUCTUS FORSYTHIAE), Xuan Shen (RADIX SCROPHULARIAE), Sheng Ma (RHIZOMA CIMICIFUGAE), Chai Hu (RADIX BUPLEURI), Chen Pi (PERICARPIUM CITRI RETICULATAE), Jiang Can (BOMBYX BATRYTICATUS), Gan Cao (RADIX GLYCYRRHIZAE).

Currently, only symptomatic and supportive treatments are available because of the unknown pathogenesis in western medicine. Compared with other recently reported cases, which include rapid worsening and even progression to death, our patient had only mild disease and survived and recovered after 10 days [4,5]. In our clinical practices, we found that when combining TCM treatment therapies with western medicine, encouraging curative rates could be achieved. Based on the “five rings” and “eight regions” theories in TCM ophthalmology, eyes are the “window” to demonstrate the disorder of interior visceral. Therefore, when treating the eye symptoms based on the clinical manifestations, we are targeting the interior disorder and the disease pathogenesis. In conclusion, we believe that through the combination of TCM and western medicine, both systematic and ocular symptoms could be significantly relieved, the curative rate could be greatly improved, and the mortality rate could be remarkably reduced. Individualized TCM treatments based on syndrome differentiation would possibly play a huge role in the prevention, treatment as well as prognosis of 2019-nCoV pneumonia.

Author’s Contributions

Lu BW was responsible for the writing and discussion. Ma KX and Wu GP were responsible for the acquisition of the clinical information and discussion. Xie LK was responsible for reviewing the manuscript. All authors read and approved the final manuscript.

Conflicts of Interest

Lu BW, None; Ma KX, None; Wu GP, None; Xie LK, None.

Ethical Approval

This study followed the tenets of the Declaration of Helsinki and was approved by Eye Hospital, China Academy of Chinese Medical Sciences, Beijing, China. Written informed consent was obtained from the patient.

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