

A Retrospective Observational Assessment of the Clinical Profile of Patients Attending Ophthalmic Clinic during Peaks of COVID 19 Pandemic

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Abstract

Aim: The aim of the study is to evaluate the clinical profile of patients attending ophthalmic clinic during peaks of covid pandemic.

Methods: The present observational study was conducted in the Department of Ophthalmology, Anugrah Narayan Magadh Medical College & Hospital, Gaya, Bihar, India, for the period of 1 year. The demographic data and systemic history of the patients admitted on different dates were collected from hospital records. A total of 100 patients were included in this study. The median age of the patients was 40 years (range: 10–70 years); 70 (70%) patients were male and 30 (30%) were females.

Results: The patients were predominantly males and adults. In our study, 20 (20%) out of 100 had COVID-19-related ocular manifestation. Rest of the three patients had associated symptom of watering and one of them developed periorbital rash and lid edema.

Conclusion: Mild conjunctivitis manifesting as conjunctival congestion is common and is one of the major ocular manifestations in COVID-19 positive patients even with milder disease.

Keywords: COVID-19, prevalence, eye care

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Introduction

COVID-19 has swept throughout the world and currently poses a global threat to public health. [1] After the whole world had entered a state of emergency [2], strict restrictions were implemented on social interactions and travel, including domestic and foreign interactions. A large scale nationwide home quarantine brought about new ways of working and living.

The COVID-19 affects so many aspects of social life, many of which are related to being at risk for falling ill and straining the medical care system. Therefore, the public psychological states of the general population must not be overlooked. [3] The COVID19 pandemic may trigger a wide variety of psychological harm, such as anxiety, disappointment, depression,

loneliness, isolation, fear, panic disorder, and other outcomes. [4]

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an envelope, single-stranded RNA virus that causes coronavirus disease 2019 (COVID-19). It is highly transmissible through respiratory droplets produced by infected person and has a worrisome fatality of 2%–3%. [5] Symptoms can appear within 2–14 days of exposure. [6] The main symptoms of COVID-19 are fever, cough, fatigue, slight dyspnea, sore throat, headache, conjunctivitis, and gastrointestinal complaints. Complications in severe cases include pneumonia, renal failure, cardiomyopathy, encephalopathy, vasculopathy, and coagulopathy.

The implementation of social distancing to prevent community transmission has brought in new challenges for patients accessing health care services both due to the lockdown and the lack of access to transport to access the same. Relevant guidelines for providing clinical care to the patients are constantly evolving across different specialties in health care. [7-9]

Emergency eye care is of utmost importance and must be provided to all patients in need. The imposed lockdown restrictions leading to decreased access to care due to the unfortunate circumstances of the pandemic only compounds the problem. Practice guidelines to consider during the lockdown period for ophthalmologists include triaging of patients to cater to emergencies, modified patient flow in the outpatient department and operation room, use of personal protective equipment, infection control, and management of manpower, among others. [10]

The aim of the study is to evaluate the clinical profile of patients attending ophthalmic clinic during peaks of covid pandemic.

Materials and Methods

The present observational study was conducted in the Department of Ophthalmology, Anugrah Narayan Magadh Medical College & Hospital, Gaya, Bihar, India, for the period of 1 year.

Patients with fever, upper respiratory symptoms, or asymptomatic individual who were confirmed positive for COVID-19 by reverse transcription-polymerase chain reaction from nasopharyngeal swabs were included in the study.

Diagnosis and classification of COVID-19 cases were done based on guidelines provided by Ministry of Health and Family Welfare, Directorate General of Health Services, India. The study was conducted in accordance with the ethical standard of the institutional research committee and adhered to the tenets set forth in the Helsinki declaration.

Methodology

Patient's information was collected from the hospital record and the data were maintained in a predesigned proforma consisting of demographic details, exposure history, systemic symptoms, systemic illness, ocular symptoms, and ocular signs. Ocular history and examination had been done by an ophthalmologist posted in the ward wearing complete personal protective equipment using a torchlight, during the ward rounds by maintaining at least 1 m distance to avoid exposure of COVID-19 infection and the findings were recorded in the case notes. The details of the pattern of conjunctivitis were recorded mainly on the basis of presenting symptoms and torchlight examination findings. The data collected were entered into Microsoft Excel sheet and statistical analysis was performed using STATA ver. 12.1 (STATA Corp, College Station, Texas). Continuous variable age was presented as the median and range (min–max).

Besides this, categorical variables were presented as frequency as well as in

percentage. Categorical data were tested by applying Fisher's exact test. A P value of <0.05 was considered to be significant.

The demographic data and systemic history of the patients admitted on different dates were collected from hospital records. A total of 100 patients were included in this study. The median age of the patients was 40 years (range: 10–70 years); 70 (70%) patients were male and 30 (30%) were females.

Majority of them were recorded in the 3rd week of admission and few patients (13 patients in 1st week and 15 patients in 2nd week) were in the initial 2 weeks. Many were screened for COVID-19 at an asymptomatic stage because of high-risk contact history.

History recorded regarding systemic symptoms of COVID-19 was noted to document the manifestation of COVID-19 and its association with ocular symptoms. 79 (62.20%) patients had no systemic symptoms, 45 (45%) patients had cough, 12 (12%) had sore throat, and 8 (8%) had fever. Information regarding other systemic illness of these patients was collected for its association with ocular symptoms.

Results

Out of 100 patients included in the study, 20 (20%) patients had ocular complaints [Table 1]. The total number of patients who met the criteria for ocular involvement associated with the COVID-19 disease spectrum was 10 out of 20 (excluding one patient who had history of cataract surgery 1 month back with a complaint of mild conjunctival congestion continuing since the surgery without

exacerbation of symptoms after admission). The other patients had other ocular manifestation comprising ocular burning sensation in one patient, history of only watering from eyes in one patient, and one hordeolum external in one patient [Table 2]. 8 out of 20 patients developed ocular manifestation along with COVID-19-related systemic symptoms while 5 out of 20 patients developed ocular manifestation before any COVID-19-related systemic symptoms. Data collected regarding onset of ocular manifestation and its association with the day of onset of COVID-19-related systemic symptoms was analyzed.

Among the five systemically asymptomatic COVID-19 patients who developed ocular manifestation, four patients developed conjunctival congestion during 1st week of being detected and one patient during 3rd week. History regarding the risk factors for conjunctivitis such as hand hygiene, eye protection, past history of eye disease, and previous ocular surgery was collected. Eighteen patients (14.17%) were using spectacles. History regarding hand-eye contact was collected to find the awareness of hand hygiene practices among patients.

Most of the patients gave history of no hand-eye contact, 40 patients (40%) had history of hand-eye contact among them 30 patients with sanitized hand and one patient gave history of hand-eye contact without washing hands.

Two patients had history of cataract surgery and one patient had history of refractive (LASIK) surgery in the past, rest no patient had previous history of any eye diseases.

Table 1: Ocular symptoms of patients

Symptom	No of patients	Percentage
Conjunctival congestion	10	10%
Burning sensation	5	5%
Watering	3	3%
Painful eyelid swelling	2	2%

Table 2: Characteristics of patients with other ocular manifestations

Patient	18	19	20
Age (years)	44	55	28
Sex	Female	Male	Male
Contact history	Contact from positive nonfamily member	Contact from positive Nonfamily member	Contact from positive nonfamily member
COVID-19-related systemic symptoms	No	No	No
Systemic illness	Hypertension, hypothyroidism	HTN	Nil
Ocular complaints	Burning sensation for 7 days	Watering for 10 days	Painful swelling in left lower eyelid for 4 days
Day of manifestation of ocular symptom after admission	7th day	2nd day	2nd day
Hand-eye contact	No	Yes	No
H/O use of goggles	Yes	Yes	No

Discussion

The COVID-19 pandemic maybe a double-edged sword, as it is not only a huge challenge to the public health but also a rare chance for the transformation of optometry education. Scholars have suggested that the increasing acceptance of such a transformation is due to its alignment with the biomedical models of professionalization, education, research, and practice. [11]

The patients were predominantly males and adults. In our study, 20 (20%) out of 100 had COVID-19-related ocular manifestation. Rest of the three patients had associated symptom of watering and one of them developed periorbital rash and lid edema. 8 out of 20 patients developed ocular manifestation along with COVID-19-related systemic symptoms while 5 out of 20 patients developed ocular manifestation before any COVID-19-related systemic symptoms.

46 out of 100 patients had upper respiratory tract symptoms. 8 (8%) out of this, 5 patients (5%) developed

conjunctival congestion, manifestations and is the first report of the clinical findings in our population. The prevalence of conjunctival congestion had been discussed in previous studies. [12-15]

COVID-19 has led to global changes in all trades and professions, which may be due to rethinking previous patterns. The COVID-19 pandemic has been a large test for the ophthalmic care system that includes mental health, professional education, and clinical practice. The implications of COVID-19 on future ophthalmic care may promote new styles of cooperative research on basic medicine, clinical medicine, and public health, which needs to be improved, especially cross integration with non-medical disciplines such as the Internet, big data, artificial intelligence, and information science. [16]

In addition, cultivating the combined leading talents found in clinical optometry and public health represents the general trend. Furthermore, this pandemic reinvigorated patients' and doctors' attention to public health, the health needs, and health care services. When patients

choose a health care provider, there may now be more focus on the facility and function, juxtaposed with higher demands placed on quality, safety, and professionalism.

This will be the same demand for ophthalmic surgery patients and ophthalmologists. The pandemic could bring its service to a higher level, which can better improve patients' quality of life. [17]

It is very important to balance the provision of patient care services and minimize the risk of exposure to the hospital staff from suspected COVID-19 positive patients. Analysis of the electronic medical records of the current distribution of patients presenting with various ocular disorders lends valuable insight to strategize the plan for future eye care services. [18] In this unprecedented time of change, where we are challenged to adapt to the delivery of eye care services to our patients, we need to utilize insights from data and base our decisions and strategy on the same. With the modification of guidelines of the lockdown and the possibility of multiple cycles of the same being brought into force based on the current scenario, it is important to follow standard triaging protocols for eye care. This will enable the provision of excellent, equitable and efficient eye care to all those in need in the time of the COVID-19 crisis.

Conclusion

An understanding of the demographic and clinical profile of the patients helps to plan our resources better after the lockdown as we all prepare to adapt to a new way of eye care delivery in the days to come, safe guarding the health of our patients and also our care givers. A careful COVID-19-related history and symptoms should be asked and if the conjunctivitis is accompanied by any of the COVID-19 symptoms even if very mild, they should

undergo COVID-19 testing. Therefore, ocular examination should be exercised with extreme precautions with the knowledge that conjunctivitis is a known association of COVID-19 symptoms and larger surveillance is required to confirm if it could be a primary manifestation.

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