

EMERGENCY ROOM OPHTHALMOLOGY PRACTICE DURING COVID-19 RELATED LOCKDOWN: A CROSS-SECTIONAL STUDY

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ABSTRACT

This report depicts the effect of COVID-19 related lockdown on emergency room ophthalmology practice in a tertiary care setup of Punjab. A cross sectional study was designed at department of Ophthalmology, Gujranwala Medical College/ Teaching Hospital from 24th March 2020 to 9th May 2020 (47 days lockdown period). All the patients who presented to eye emergency room during this period are described. The protective strategies adopted by the duty doctors are also described. Total 454 patients presented to eye emergency room, out of which 24 patients underwent emergency surgical procedure. The burden of patients presenting to eye emergency room was less than routine during lock down period. All the duty doctors used N95 (Giko1200F) particulate respirator during patient examination. Problems faced by ophthalmologists while wearing face masks were misting of spectacles, eyepieces of slit-lamp biomicroscope and condensing lenses. In perspective of keeping population indoor and avoiding unnecessary visit to hospitals the lockdown remained effective.

Key Words (MeSH): Emergency Service, Ophthalmology, COVID-19, pandemic

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INTRODUCTION:

In March 2020 WHO announced COVID-19 (corona virus disease) outbreak as a global pandemic¹. COVID-19 is a very contagious disease and spreads by human to human contact, droplets, tears, secretions and fomites². To prevent spread of this disease different countries and governments around the globe adopted different preventive strategies, keeping in view their population and financial reserves³. The main aim behind these restrictions was to prevent the serious COVID-19 patients, from out-numbering the hospital's intensive care facilities³. Government of Pakistan imposed lock down to prevent spread of COVID-19,

which was imposed on provincial level on 24 March 2020 and then extended by the federal government till 09 May 2020⁴. After that the policy of smart lock down was implemented. During this 47 days of lock down period the public transport facility, schools and business points remained completely closed all across Pakistan.

In health care setup, during this time period all the routine outpatient and elective services remained suspended across the country. However, emergency services were completely functional.

Ophthalmology practice across the country was also affected. Most of the trust and private sector eye care hospitals were completely closed (both elective and emergency). In public sector eye care units, only emergency facilities remained functional. This study was designed to describe the impact of COVID-19 related lockdown on emergency ophthalmic practice in a public sector tertiary care hospital. All the patients who presented to ophthalmic emergency during this lock period are described. Emergency surgeries performed during this time period and personal protection strategies used by the ophthalmologists in our unit are all described in detail.

METHODS AND RESULTS:

After approval from institutional review board, a cross-sectional study was designed at ophthalmology department, Gujranwala medical college/ Teaching hospital. *Inclusion criteria* included, all the patients who presented to eye emergency room during 47 days of complete lock down from 24 March 2020 – 09 May 2020. There was no *exclusion criteria*, all the patients who presented in this duration were included in this study.

Data was extracted from emergency room record register. Admitted patients data was collected from patient's record file. Data was entered to excel spread sheet and categorized according to disease region (cornea/ conjunctiva/ posterior segment/ trauma etc.). Descriptive statistics are used to describe the data.

Total 454 patients presented during lockdown period to eye emergency room. The demographic details of gender and age distribution are shown in table 1. Patients were categorized according to their ophthalmic region of disease of presentation.

Most common presenting complaint was with corneal and external diseases (conjunctiva & Sclera) 194 patients (n=454). It was followed by ocular trauma 87 patients (n=454). Presenting complaints according to

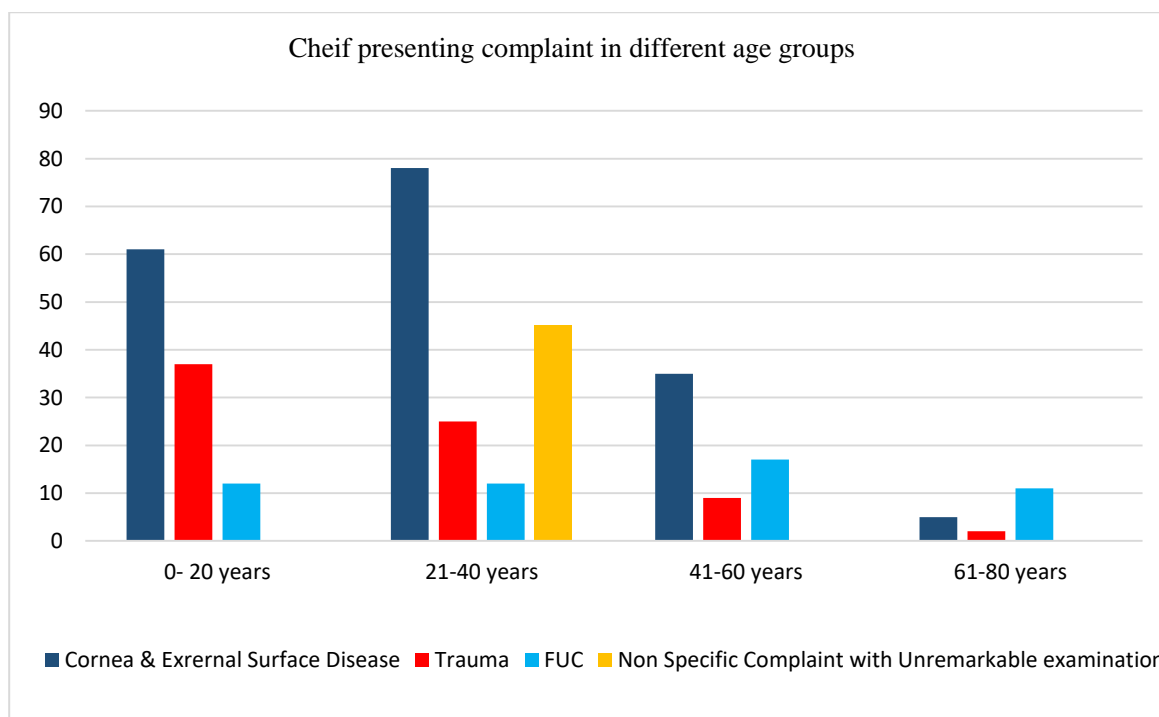
age groups and details of medically/surgically managed cases are shown in (Diagram 1).

Table 1: Demographics details of the patients (Gender distribution and Age Groups)

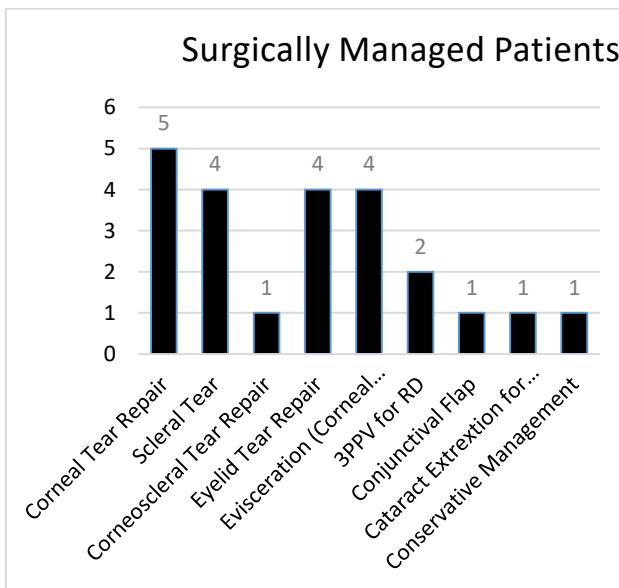
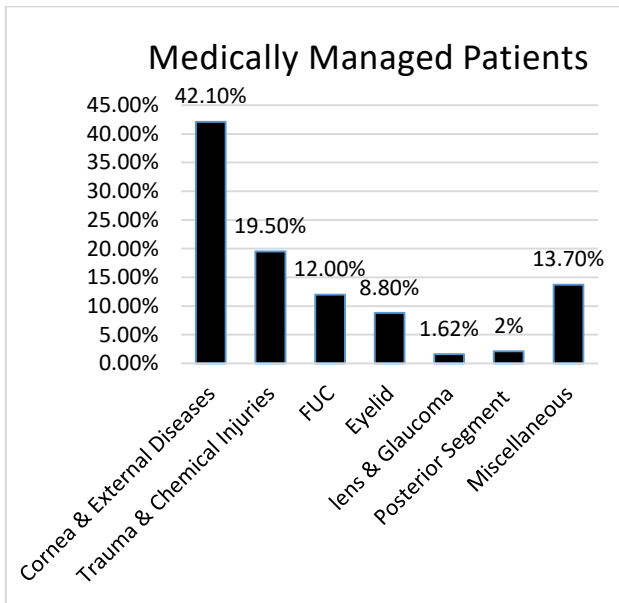
Gender Distribution	Medically managed (n=430)	Surgically Managed (n=24)	Total (n=454)
Male	328 (76.3%)	20 (83.3%)	348 (76.6%)
Female	102 (23.7%)	4 (16.6%)	106 (23.3%)
Total	430 (100%)	24 (100%)	454 (100%)

Age Distribution	Medically managed (n=430)	Surgically Managed (n=24)	Total (n=454)
0 – 20 years	132 (30.6%)	8 (33.3%)	140 (30.8%)
21-40 years	160 (37.3%)	5 (20.8%)	165 (36.3%)
41-60 years	107 (24.8%)	7 (29.1%)	114 (25.1%)
61-80 years	31 (7.3 %)	4 (16.6%)	35 (7.7%)
Total	430 (100%)	24 (100%)	454 (100%)

Patients with unremarkable clinical examination were most common in age group of 21-40 years and comprised 28 % of the patients in this age group.



- *FUC – Follow up Cases



(Diagram 1)

DISCUSSION:

In pre-pandemic time, roughly 350 patients used to present in eye outdoor department daily. Elective surgery list was up to 45 cases per week in addition to daily minor eye emergency procedures. Among these daily 350 outdoor patients, 30-40% of cases used to present due to refractive errors. Additionally, 15-20% patients had unremarkable examination and a significant number being referred by other specialty departments. During lockdown, a massive reduction in percentage of these patients coming to hospital was seen. Ratio of

patients with refractive errors decreased from 30-40% to mere 3.5% of total patients presenting to eye department during lockdown.

Telemedicine is not a routine service in Pakistan⁵ but it could've reduced patient load to the hospitals to a great extent. Our data analysis showed that out of those 454 patients, 160 (37.2%) of them could've been managed by telemedicine, thus diminishing the risk of virus exposure both in patients as well as doctors. Majority of these patients included ones with conjunctivitis, blepharitis, refractive errors and some follow-up cases.

Since ophthalmologists are extremely reliant on physical examination while attending eye patients so a number of protective measures were to be used during duty hours as per WHO guidelines^{6, 7}. During examination, face to face proximity on slit-lamp biomicroscope puts an ophthalmologist at great risk due to aerosolized particles from respiratory droplets and contact, so use of face masks along with goggles and face shields serve the purpose of personal protection⁸.

In our hospital, use of personal protective equipment's (PPEs) was ensured by duty doctors. All the duty doctors used N95 (Giko1200F) particulate respirator during patient examination. Beside these hand sanitization was also ensured before and after patient examination. It was also ensured that patient was also wearing surgical face mask during history taking and examination, as per guidelines both in Emergency-OPD settings and while attending inter-departmental calls⁹.

Issues particularly faced by ophthalmologists while using PPE were misting of spectacle lenses¹⁰ as well as the eyepieces of slit-lamp biomicroscope. While examining the retina with 90-D lens, fogging of the lens occurred because of patients wearing face mask.

CONCLUSION:

Patient turn over to eye department at Gujranwala medical college/ Teaching Hospital during lockdown reduced to a great extent. Emergency ophthalmology services were completely functional throughout the lockdown and emergency surgeries were performed whenever needed. In a manner of reducing unnecessary visits to the hospital regarding ophthalmic problems, this lockdown proved to be pretty much effective as most of the patients chose to stay home at home for minor ailments.

ETHICAL APPROVAL:

The study was approved by the Ethical Review Committee of Gujranwala Medical College-DHQ

hospital, Gujranwala, Pakistan. Vide IRB Reference No. 210/GMC Dated: June 17, 2020.

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AUTHORS' CONTRIBUTION:

UI: Manuscript writing, review, correspondence

ZH: Manuscript writing, data collection, Statistical analysis

IQM: Supervision, review