



Impact of Covid-19 on Glaucoma Patients in a Tertiary Eye Hospital of Nepal

Gupta KK* and Gurung G

R. M. Kedia Eye Hospital, Nepal

*Corresponding author: Gupta KK, R.M. Kedia Eye Hospital, Nepal; E-mail: kkg00720032@gmail.com

Abstract

Background: Purpose: To evaluate and record the impact of covid-19 lockdown on the treatment and follow-up of glaucoma patients in a tertiary eye hospital.

Materials and methods: We compared the total number of outpatient's visits from pre-pandemic February 2019 - March 2020 and pandemic period from April 2020 - March 2021. Data collection was done from Kedia eye hospital record department.

Results: A total of 8890 patients visited our hospital of which, 1102 were glaucoma patients in pre-pandemic period, 586 were male while 516 were female patients. Whereas, during the pandemic period out of 143 glaucoma patients, 65 were male and 78 were female patients. The mean number of hospital visits per patients and the mean number of glaucoma surgical procedures was decreased $p < 0.0001$ between pre-pandemic and pandemic period.

Conclusion: The covid-19 pandemic lockdown reduced the number of patients and surgeries impacting the follow-up of glaucoma patients and paradigm shift to teleophthalmology should be the future to meet the need of the glaucoma patients and to better prepare for a possible outbreak of any pandemics.

Keywords: Covid-19; Glaucoma; Pandemic

Introduction

Glaucoma is the leading cause of irreversible blindness and accounts for about 4% to 10% in India and is chronic progressive disease requiring life-long management to delay the disease progression, with regular follow-up and medications to prevent severe visual field loss later in life. Even before COVID pandemic, poor medication adherence and failure of periodic glaucoma follow-up visit posed an obstacle for the proper disease management, the implementation of strict social distancing and travel restriction during covid pandemic had further intensified the problem of routine follow-up visits affecting the continuum of glaucoma management. The psychosocial factors like anxiety and depression which were already known barriers to medications adherence in glaucoma patients must have perpetuated in many during the lockdown [1]. Pneumonia with unknown origin was first diagnosed in Wuhan on December 31, 2019. Progressively spreading to other countries with WHO declaring it a public health emergency of international concern. On January 13, 2020,

a Nepalese student who returned from Wuhan, china was the first 2019 novel corona virus case detected in Nepal. Since then, 616000 have already been infected with 8597 recorded deaths [2]. Covid-19 outbreak forced most of the efforts on emergency units to treat high number of cases in short period of time, given the quick spread of the virus, this forced several other health services to suspend activities, which left a high number of chronic patients without medical assistance. However, to the best of our knowledge, none of the studies have been done to find out the impact of pandemic on glaucoma patients in this region, this would help to understand the impact on patients' assistance and prepare better health services when pandemic is resolved. This study would help to evaluate the impact of Covid-19 on the treatment of glaucoma patients and to understand the impact on patient's assistance at a tertiary eye hospital.

Received date: 15 September 2023; **Accepted date:** 03 October 2023; **Published date:** 07 October 2023

Citation: Gupta KK, Gurung G (2023) Impact of Covid-19 on Glaucoma Patients in a Tertiary Eye Hospital of Nepal. SunText Rev Med Clin Res 4(4): 189.

DOI: <https://doi.org/10.51737/2766-4813.2023.089>

Copyright: © 2023 Gupta KK, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Materials and Methods

This is hospital-based retrospective study conducted at R.M. Kedia Eye Hospital, and conducted with the declaration of Helsinki. Ethical clearance from the hospital review committee was taken to carry out the study. Permission from the hospital record section was also taken to generate the data. Datas were divided into two groups: from pre-pandemic group February 2019 – march 2020 to pandemic group April 2020- march 2021, and was recorded on preformed Performa and analyzed using Microsoft Excel and Statistical Package for Social Sciences (SPSS) version 20.0

Results

A total of 8890 patients visited our hospital of which 1102 were glaucoma patients (recently diagnosed and or previously diagnosed), of which 886 were under topical medications and 216 patients underwent glaucoma surgical procedure observed during the pre-pandemic period from February 2019- March 2020, whereas out of 143 glaucoma patients, of which 114 were under topical medications and 29 patients underwent glaucoma surgical procedure visited the hospital during the pandemic period from April 2020- March 2021. Out of 1102 glaucoma patients in pre-pandemic period, 586 were male while 516 were female patients. Whereas, during the pandemic period out of 143 glaucoma patients, 65 were male and 78 were female patients (Tables 1-3).

Table 1: Surgical Procedures performed in each period.

	Pre-Pandemic	Pandemic	Variation
Combined surgeries	95	6	-93.68%
Filtering surgeries	89	11	-87.64%
Phacoemulsifications+ Goniosynecholysis	30	10	-66.66%
Needlings	2	2	-
Total No. of Procedures	216	29	-86.57%

Table 2: Gender wise distribution of each period.

Gender	Pre-Pandemic period	Pandemic Period
Male	586 (53.17%)	65 (45.45%)
Female	516 (46.82%)	78(54.54%)

Table 3: Paired analysis of patients attending both periods.

	Pre-Pandemic Period	Pandemic Period	P-value
Hospital visits	1.46 ± 0.92	1.04 ± 0.18	<0.0001
Glaucoma Surgical procedures	1.87 ± 0.79	1.13 ± 0.41	<0.0001

Discussion

Covid-19 pandemic has led to decrease ophthalmology services worldwide with significant impact on the glaucoma patients interrupted from receiving glaucoma services at their nearby centers. Our study showed a significant impact of the pandemic on the care of glaucoma patients followed in a tertiary center. Our study showed an 87% decrease in the number of visits during the pandemic period which correlates well with study by Ayub [3]. The Brazilian council of medicine has estimated a 34% reduction in the number of appointments for retina and glaucoma clinics between March and December 2020, which correlates well with our study which shows the mean reduction in visits from 1.46 ± 0.92 to 1.04 ± 0.18 , which represents a 42% reduction [4]. In their study of impact of covid-19 on follow up and medications adherence in patients with glaucoma in a tertiary eye care center in south India, among 393 telephone -interviewed patients who had lost follow-up, 90.63% reported lockdown restrictions, 74.38% transportation problems, 9.09% absence of symptoms and 4.13% financial difficulties as the reason to miss the visits, which corresponds with our study showing 87% reductions in patients visits during the pandemic period [5]. Adherence to medication has been affected in many chronic diseases during the pandemic, pertaining to lack of availability or accessibility to medications [6]. The number of glaucoma surgeries significantly decreased at our center which can be explained by the fact that lockdown period, lack of tele glaucoma service, low socioeconomic status, lack of awareness and poor understanding of glaucoma poised a known barrier for adherence of glaucoma treatment [7,8]. This study has some limitations as the data obtained from the hospital data system since there are chances that few of the data may have been missed during the pandemic period due to lack of manpower and resources. The method to measure adherence through questionnaire would have been informative about compliance and the reasons for not visiting the hospital but then which is not possible in a retrospective study.

Conclusion

The covid-19 pandemic lockdown reduced the number of patients and surgeries impacting the follow-up of glaucoma patients. Our study encourages the health care units for the need of decentralization of glaucoma care to primary centers and



paradigm shift to teleophthalmology should be the future to meet the need of the glaucoma patients and to better prepare for a possible outbreak of any pandemics.

References

1. Newman-Casey PA, Robin AL, Blachley T, Farris K, Heisler M, Resnicow K, et al. The most common Barriers to glaucoma medication adherence: A cross-sectional survey. *Ophthalmol* 2015; 122: 1308-1316.
2. Bastola A, Sah R, Morales AJR, Lal BK, Jha R, Ojha HC, et al. The first 2019 novel coronavirus case in Nepal. *The Lancet*. 2020; 20: 279-280.
3. Ayub G, Vasconcelos J, Costa VP. The impact of covid-19 in the follow -up of glaucoma patients in a tertiary center: A comparison between Pre-Pandemic and Pandemic Periods. *Cli Ophthalmol* 2021;15; 4381-4387.
4. Pandemic brings down almost 30 million medical procedures in SUS outpatient clinics. 2021.
5. Lee BW, Sathyan P, John RK, Singh K, Robin AL. Predictors of and barriers associated with poor follow-up in patients with glaucoma in South India. *Arch Ophthalmol*. 2008; 126: 1448-1454.
6. Verma A, Rajput R, Verma S, Balania VKB, Jangra B. Impact of lockdown in COVID-19 on glycemic control in patients with type 1 Diabetes Mellitus. *Dia Met Syn*. 2020; 14: 1213-1216.
7. Subathra GN, Rajendrababu SR, Senthilkumar VA, Mani I, Udayakumar B. Impact of covid-19 on follow-up and medication adherence in patients with glaucoma in a tertiary eye care centre in south india. *Ind J Ophthalmol*. 2021; 69: 1264-1270.
8. Killeen OJ, Pillai MR, Udayakumar B, Shroff S, Vimalanathan M, Cho J, et al. Understanding barriers to glaucoma treatment adherence among participants in South India. *Ophthalmol Epi*. 2020; 27: 200-208.