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The yearly impact of COVID-19 pandemic on emergency ophthalmic care at a secondary center



To the Editor,

We read with great interest the article entitled ‘The impact of COVID-19 lockdown measures on ED visits in Lebanon’ by Mahmassani et al. (<https://doi.org/10.1016/j.ajem.2020.11.067>) [1]. The topic is certainly important and exchange of international experience could help ophthalmic departments to better organize their emergency service during and after the current pandemic. The authors noted the changes in numbers and disease entities of ophthalmic emergencies during the COVID period and highlighted the need to identify the reason behind these changes. To expand on this, we present findings from our experience regarding the yearly incidence of ophthalmic emergencies before and after the COVID-19 outbreak in a secondary ophthalmic center.

The ongoing pandemic of COVID-19 has largely affected ophthalmology practice in almost every aspect. The global tendency, is to postpone non urgent procedures and instead, accommodate COVID-19 affected patients. Ophthalmology, in specific, is one of the mostly affected specialties since the vast majority of outpatient clinics and scheduled surgeries (i.e., cataract extractions) could be deferred without

extreme risk, at least in the short term [2,3]. Apparently, ophthalmic emergencies departments continued to operate in ophthalmology settings although they have been affected as well [4]. Recent studies report a shift of the visit profile in OED during the pandemic [5]. The aim of our retrospective study was to investigate the impact of COVID-19 pandemic on the incidence and the type of visits in the ophthalmic emergencies department (OED) in a publicly funded district general hospital.

This retrospective case-control study took place in the ophthalmology department of Volos General Hospital in Central Greece which serves a population of 210,000 habitants. The study protocol adhered to the tenets of the Declaration of Helsinki, anonymity and confidentiality were guaranteed while relevant approval from the Institutional Review Board at the Volos General Hospital, was obtained. Data were collected retrospectively from charts of patients who presented at the Volos General Hospital OED in two distinct periods: First, between 1st of March 2019 and 28th of February 2020 (pre-COVID period) and second, between 1st of March 2020 and 28th of February 2021 (COVID period). All patients that examined by an attending or trainee ophthalmology during the study periods were eligible for the study. The primary outcome was the total volume of total emergency visits and individual patients and a secondary outcome was the type of diagnoses depending on their severity (non-urgent, urgent and severe). For the purposes of the study, cases have been arbitrarily classified as non-urgent when no significant pain or vision reduction was involved, urgent when even a minor intervention was necessary to relief from pain and eliminate the risk for vision loss and last, severe when admission or major intervention (surgery or laser treatment) was necessary

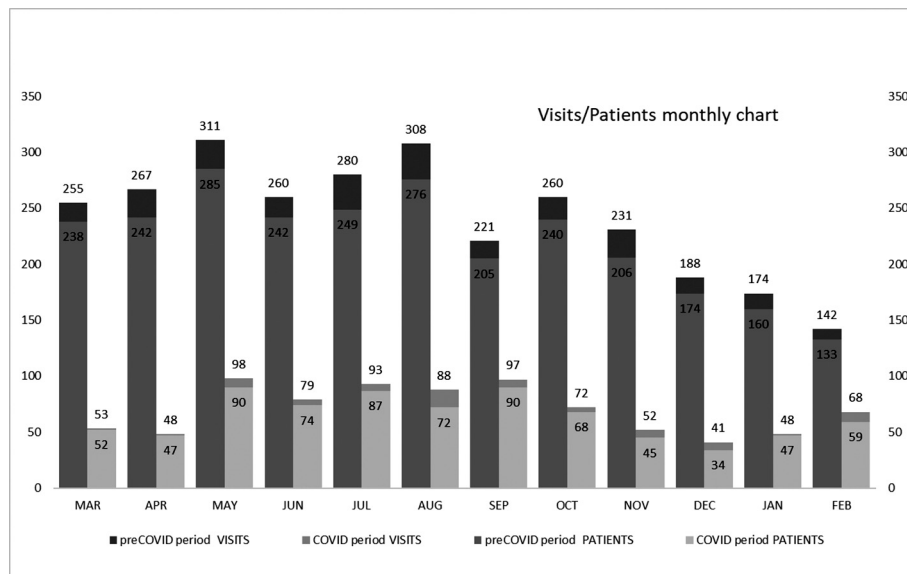


Fig. 1. Monthly distribution of patients and visits in ophthalmic emergencies department during the pre-COVID and COVID affected year.

Table 1

Non urgent presentations have been decreased compared to more severe cases (the numbers are referring to individual patients and not visits).

Period	Non-urgent cases	Mild urgent cases	Severe cases	Total
Pre-COVID	608 (22.9%)	1897 (71.6%)	145 (5.5%)	2650
COVID	156 (20.4%)	562 (73.5%)	47 (6.1%)	765
P-value	0.2466	0.6811	0.5341	

Nevertheless, all types of cases, even the severe ones, have been vastly reduced.

Non urgent cases: Due to lack of primary ophthalmic care, some patients asked for advice regarding non-urgent/chronic problems.

Mild urgent cases: Minor traumas (corneal foreign bodies), mild infections, floaters etc.

Severe cases: Ophthalmic traumas, retinal detachments, severe infections etc.

to eliminate the risk of vision loss. Data were analyzed using Microsoft Excel 2007 for Windows (Microsoft Corporation, Redmond, WA, USA).

Our analysis showed that 2650 patients and 2897 visits recorded during the pre-COVID period while 760 patients visited the unit 832 times during the pandemic period. The overall reduction was -71.33% for patients and -71.28% for visits while the monthly pattern has remained the same (increased workload during summer months) (Fig. 1). Looking at the breakdown of types of examined cases, as presented in Table 1 there is an evident reduction of non-urgent cases presented in OED during the COVID period.

According to findings, the volume of visits in OED has been hugely decreased possibly because of patient's concern about the pandemic and also due to minimized external activities which conceivably resulted to fewer cases of traumas. On the other hand, results also demonstrated that the percentage of non-urgent visits has slightly reduced compared to urgent and severe cases, not reaching though statistical significance. In specific, overall severe vision-threatening cases have been significantly reduced (from 145 to 47) which impose a potential risk for vision loss in the community. This observation comes in agreement with recent reports and highlights the need for proper action [6]. For the post-COVID era when ophthalmic emergencies could be allocated according to their severity and managed initially even with a phone or video consultation before presentation. A dedicated phone line could attribute to a significant improvement of ophthalmic services by avoiding an unnecessary workload and subsequently, condense hospital visits.

Availability of data and material

All data support published claims and comply with field standards.

Authors' contributions

All authors whose names appear on the submission:

- 1) made substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data; or the creation of new software used in the work;
- 2) drafted the work or revised it critically for important intellectual content;
- 3) approved the version to be published; and

- 4) agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Ethics approval

This retrospective chart review study involving human participants was in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The Human Investigation Committee (IRB) of Volos General Hospital approved this study (No. 01/25-01-2021).

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Declaration of Competing Interest

All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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Konstantinos T. Tsaousis

Department of Ophthalmology, General Hospital of Volos, Greece

E-mail address: konstantinos.tsaousis@gmail.com

Stergios Chaloulis

Department of Ophthalmology, General Hospital of Volos, Greece

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