The impact of COVID-19 on Eye Casualty in a tertiary unit: A retrospective notes review of the first month into lockdown compared to a pre-lockdown control

[1]Vishal Shah, [1]Ketan Limbachia, [1]Seema Verma

[1]St Thomas' Hospital, Guy's & St Thomas' NHS Foundation Trust, London, UK

Introduction

In December 2019, China saw the emergence of a novel coronavirus disease (COVID-19) that would spread to the entire world and lead to the World Health Organisation (WHO) issuing the onset of a new pandemic for the first time in more than 10 years[1].

The UK saw Emergency department attendances plummet in the lead up to the first national lockdown with only 1.53 million attendances recorded in March, 29% down from 2.17 million in the same month the previous year[2].

The Royal College of Ophthalmologists published their report on, "The Way Forward" in emergency eye care in 2015, and reported that a limitation of the current "walk-in" model was "too many patients with not much wrong with them" [3].

The additional self-scrutiny from the perceived risk of contracting COVID-19 along with a re-evaluation of the need to access the emergency services during lockdown, served to test this hypothesis in walk-in Eye Casualties. If true it would translate to a sizeable fall in the overall number of attendances and a corresponding fall in the number of non-urgent diagnoses made.

An understanding of the change in behaviour of our patients during lockdowns enables us to better anticipate the likely challenges to be faced in future lockdown and post-lockdown periods.

Aims

To compare attendances to Eye Casualty at St Thomas' Hospital during lockdown with a pre-lockdown control.

Methods

Attendances for the first month of lockdown (23rd March to 23rd April 2020) were compared with a control month (November 2019). A randomly selected sample of 100 attendances (open-source random number generator[4]) was analysed from both groups. The first week post-lockdown was also examined (11-15th May 2020), with deep dive analysis of one day during this week (13th May 2020).

Data analysis was performed using Microsoft Excel and the Relative Ratio (RR), its Standard Error and 95% Confidence Intervals were calculated as described by Altman[5]. Data was collected as part of registered GSTT Trust Clinical Audit Project Number 10895 and used in keeping with the tenets of the Declaration of Helsinki and in accordance with the UK Data Protection Act 2018.

References

1. World Health Organization. Novel Coronavirus (2019-nCoV): Situation Report 1, 2020 January
2. NHS England. Statistical commentary, A&E Attendances and Emergency Admissions, 2020 March (https://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2020/04/Statistical-commentary-March-2020-jf8hj.pdf)
3. The Royal College of Ophthalmologists. The Way Forward, 2015 (https://www.rcophth.ac.uk/wp-content/uploads/2015/10/RCOphth-The-Way-Forward-Emergency-Eye-Care-300117.pdf)
4. Graphpad Software. QuickCalcs (https://www.graphpad.com/quickcalcs/randomN1)
5. Altman DG. Practical statistics for medical research. CRC press; 1990 Nov 22

Results

The number of attendances in the pre-lockdown control month (November) was 656, whereas in the lockdown month it was 277. Demographics, referral source and status (new or known to Trust) were comparable in both samples.

An acutely sight or life-threatening diagnosis was more than twice as likely in lockdown: RR = 2.1 (95% CI 1.04-4.23, P<0.05). The likelihood of a non-urgent issue was reduced: RR 0.72 (95% CI 0.54-0.96, P<0.05) (See Figure 1). The relative risk of a medical retina or cornea diagnosis was more than twice as likely in lockdown as compared with our control sample: RR 2.45 (95% CI 1.58-3.8, P<0.05).

117 patients attended in the first week following a partial easing of lockdown, with 22 on 13th May and over half representing an urgent or worse issue. On this day, 3 retinal detachments (RD) were diagnosed, one of which a delayed presentation by 4 weeks of a macula-off RD in a young otherwise fit patient with a previous history of RD repair.

Conclusions

The lockdown sample had proportionately fewer non-urgent and more urgent and sight-threatening attendances. This fits with a greater degree of self-scrutiny. The fall in main PC of "red +/- discharge" from 13% in control to 2% of the lockdown neatly demonstrates this theory, since such symptoms are often caused by a self-limiting issue such as viral conjunctivitis (See Figure 2). The fact that "pain +/- photophobia" and "blurred vision" represented the top two reasons for attendances in both lockdown and control fits with the functional impact that is less amenable to a "wait and see" approach. This is in keeping with the relative increase in proportion of MR/Cornea diagnoses in lockdown, since they too are more likely to be symptomatically debilitating (See Figure 3).

The first week following a partial relaxation of lockdown saw a rise in the number of attendances albeit still falling short of the levels seen in our control month. Consideration of a single day this week confirmed the trend seen in lockdown, with urgent and more acute cases making up the majority. One case of serious visual morbidity from delayed presentation was noted.

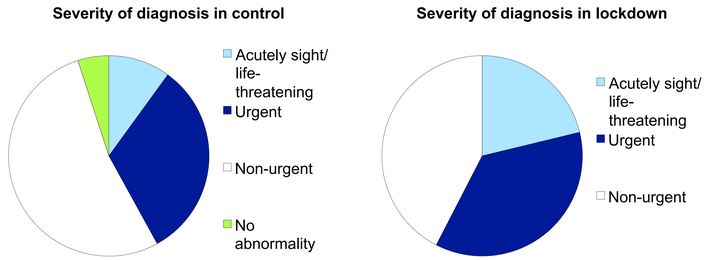


Figure 1: Comparison of severity of diagnosis as % between control and lockdown samples

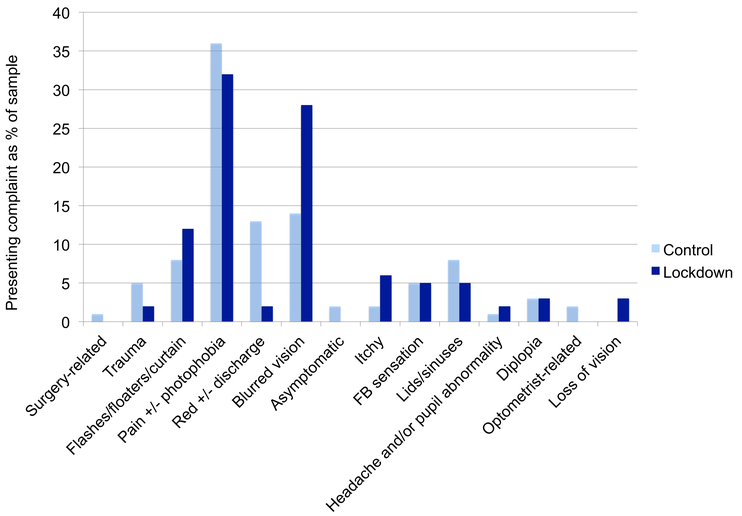


Figure 2: Comparison of main presenting complaint as % of control and lockdown samples

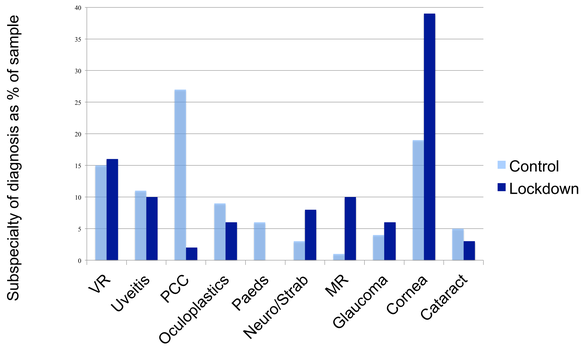


Figure 3: Comparison of subspecialty of diagnosis as % of control and lockdown samples

Take home messages

- This study has demonstrated a change in patient behaviour as a result of the COVID-19 lockdown with a fall in numbers and a shift away from the majority of Eye Casualty attendances being for non-urgent issues
- The potential visual morbidity we may see in post-lockdown periods from delayed presentation is noted
- An appreciation of these changes will allow units to better anticipate the likely challenges to be faced in future lockdown and post-lockdown periods