

Impact of COVID-19 on Acute Central Retinal Artery Occlusion Patient Attendance in Hong Kong: The HORA Study Brief Report Number 2

Sunny Chi Lik Au^{1,2*} and Callie Ka Li Ko^{1,2}

¹Department of Ophthalmology, Tung Wah Eastern Hospital, Hong Kong

²Department of Ophthalmology, Pamela Youde Nethersole Eastern Hospital, Hong Kong

*Corresponding Author: Sunny Chi Lik Au, Department of Ophthalmology, Tung Wah Eastern Hospital, Hong Kong.

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Since the start of the COVID-19 pandemic in 2020, the pattern of patient's attendance to medical units has changed drastically. It is observed that presentation of acute life threatening diseases to healthcare service also dropped sharply. One may not be difficult to understand that a decrease in human activities is associated with reduced number of trauma cases attending to the emergency department. Yet, acute stroke, which is an emergency morbidity carrying a significant percentage of mortality, also suffered a significant drop in presentation to the emergency department [1,2]. Central retinal artery occlusion (CRAO) is the ocular equivalent of stroke, where the hypoperfusion of the retina would cause blindness without prompt treatment. This brief report looks into the situation of CRAO and decide whether it would be similar to cerebrovascular stroke under the COVID-19 era.

Here, we present our Hyperbaric Oxygen for central Retinal Artery occlusion (HORA) [3] study's observation. CRAO is an acute blinding disease. It presents as sudden onset of blurring of vision. Patients' presenting visual acuities were usually of finger counting, hand movement or even light perception only. A normal Snellen visual acuity chart may not be useful given their extreme low vision. There were on average 1.7 cases of CRAO per month since the start of the HORA study before the COVID-19 pandemic, yet a long pause was observed around the period of the first diagnosed COVID-19 case locally (Figure 1). The presenting cases dropped to 0 in the first month of COVID-19's local outbreak. As a background information, hospitals were never overloaded, and there was no change in medical access policy locally. Patients all enjoyed the same standard of care under the COVID-19 era in Hong Kong. In short, CRAO, aka the ocular stroke, also experienced a drop in number of pre-

senting cases towards territory wide ophthalmology units in Hong Kong. This decline is likely out of patients' choices. We hypothesized that patients are prioritizing avoidance to potential SARS-CoV-2 exposure in clinical areas over addressing what they may perceive as insignificant symptom of unilateral blurring of vision.

Figure 1: Comparison of COVID-19 cases side-by-side to central retinal artery occlusion (CRAO) referrals by time points.

Interestingly, we observed a similar decline in CRAO referrals, but of seemingly shorter and shorter duration upon the local second and third wave of COVID-19 surge respectively (Figure 1). This could be accounted by the public's adaptation towards the new life under the COVID-19 era. However, CRAO is a rare disease by itself and the territory wide referrals for hyperbaric oxygen therapy were limited to < 6 hours of onset, thus the HORA study was of small patient number to given a strong statistical power to support statistical calculation, contributing a major limitation of the analysis.

CRAO and cerebrovascular stroke in COVID-19 positive patients are hot research topics. Some case reports correlated their simultaneous occurrence [4] with thrombosis predominating the pathophysiology; no matter in the internal carotid artery [5] or the cardiac source [6]. Our brief report demonstrated a decline in CRAO presentations during the COVID-19 surge.

Authors Contribution

Sunny Chi Lik Au: Concept and design of study, acquisition of data, drafting the article.

Callie Ka Li Ko: Revising the article for major intelligence.

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Nil.

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