

THE CHALLENGES FACED IN IDENTIFYING AN ASYMPTOMATIC COVID-19 POSITIVE PATIENT

Naseem Ahmed*¹, Muhammad Haris Farooq², Muhammad Ali Muzammil², Syed Abdul Rehman Shah²,
Kiran Shafiq Khan², Rimsha Farooq³ and Sarah Saleem²

¹Department of Pathology, Dow Medical College, Dow University of Health Sciences, Karachi, Pakistan

²Dow Medical College, Dow University of Health Sciences, Karachi, Pakistan

³The Aga Khan University Hospital, Karachi

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ABSTRACT

COVID 19 was declared as a public health emergency by the World Health Organization on 30th January 2020. 80% of COVID positive patients show mild or no symptoms at all which makes it difficult for identification by healthcare professionals. Numerous such cases have been reported where individuals were found infected but asymptomatic. For instance, on 23rd March 2020, a patient was detected in Karachi, Pakistan who showed no cataclysmic changes in his symptoms. Similarly on January 26, 2020, a whole family was tested positive after qRT-PCR tests were performed despite being asymptomatic. Furthermore, a cluster of five asymptomatic individuals were tested positive in Anyang, China on January 2020 despite having no travel history but had contracted the disease from their family members who had previously travelled to Wuhan, the epicenter. Fluctuations in PCR tests can also be found where second test results turn out to be positive. To accommodate asymptomatic patients, Pakistan set up its Field Isolation Centre in Karachi Expo Centre on 6th April 2020. Moreover, according to CDC China, individuals being afebrile for 3 days or being tested negative twice for nucleic acids tests can be discharged. Screening of asymptomatic patients should be stepped up in all hospitals.

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INTRODUCTION

COVID-19, short for coronavirus disease 2019 is responsible for causing coronavirus disease resulting in respiratory tract infection that has been declared as a pandemic. On 30th January 2020, the World Health Organization (WHO) declared it as a public health emergency [1]. These viruses were termed as coronaviruses on their morphological basis since their spherical core-shell and spikes gave it a resemblance to the solar corona. Beta coronavirus among its seven subtypes is found to cause disease of highest severity and fatality while the alpha coronavirus causes asymptomatic infections [2], transmitted via airborne droplets, by close contact with infected person, and by contact with contaminated surfaces [3]. In affected symptomatic individuals, the signs and symptoms begin to appear within 4-5 days on average, though it can be up to 14 days in 97.5% individuals [9] with a wide range of signs and symptoms consisting of repetitive cough, fever, fatigue, and nasal congestion. With the increase in disease intensity patients may suffer shortness of breath and complication like pneumonia [2]. On CT scan COVID-19 infection usually manifests itself as the ground glass opacity with infrequent consolidations [1].

According to the WHO report, on 31 December 2019, WHO China Country Office was notified regarding the cases of

pneumonia of unknown etiology that were detected in Wuhan City, Hubei Province of China [3]. On 7 January 2020, Chinese authorities detected a new type of coronavirus. From 20 January 2020, 2019-nCoV cases were reported from four countries including China (278 cases), Thailand (2 cases), Japan (1 case) and the Republic of Korea (1 case) [3]. After that, the Coronavirus kept on spreading to multiple areas. Globally, 1,521,252 confirmed cases and 92,798 deaths have been reported [3]. As of 9th April 2020 WHO report, a total of 799,696 confirmed cases has been reported in European Region, 493,173 cases in Region of the Americas, 117,247 cases in Western Pacific Region, 88,657 cases in Eastern Mediterranean Region, 12,978 in South-East Asia Region, and African Region has confirmed 8,789 cases [3].

The statistical data of the Islamic Republic of Pakistan shows a tremendous increase in the number of confirmed cases. After the eruption of new infections, a total of 4,695 confirmed cases have been reported to date. Out of these, 3,902 cases were active whereas the death toll has risen to 66 [4]. As per 10 April 2020, among province Punjab has confirmed 2,287, the highest number of cases. Sindh follows the second with 1,214 confirmed cases. Other provinces such as Khyber Pakhtunkhwa confirmed 620, Balochistan 219, Gilgit Baltistan 215, and Islamabad reported 107 cases congruently. Other

*Corresponding author: Naseem Ahmed

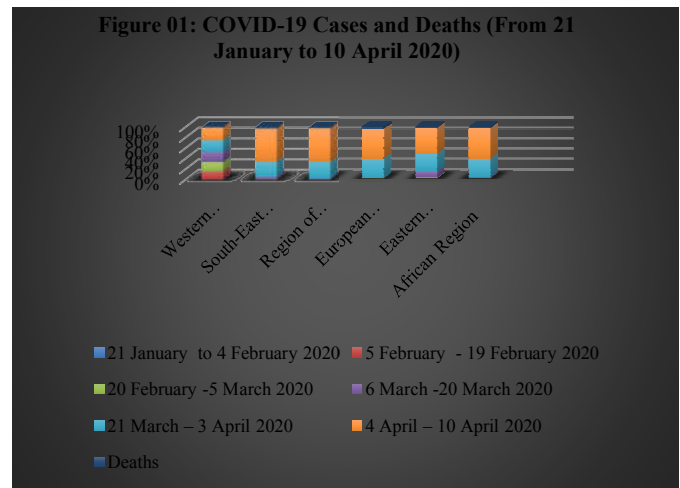
Department of Pathology, Dow Medical College, Dow University of Health Sciences, Karachi, Pakistan

regions such as Azad Jammu Kashmir reported 33 cases [4]. While the total death toll reached 22 in Khyber Pakhtunkhwa, 21 in Sindh and 18 in Punjab. Other small provinces such as Islamabad, Balochistan, Gilgit Baltistan, and Azad Jammu Kashmir registered 5 deaths respectively [4].

While recruiting the COVID-19 positive patients a bulk of COVID-19 positive but asymptomatic patients have been reported. On 23rd March 2020, 300 people had been tested positive for coronavirus in which 90 % of patients were symptomless and had not shown any kind of signs related to this disease [5]. Another case of an asymptomatic positive patient was reported on 23, March 2020 in Karachi, Pakistan similar to the previous patient showed no cataclysmic changes [6]. A similar case was reported on Jan 26, 2020-Jan 29, 2020, in China where the whole family was infected with this deadly virus and appeared positive in qRT-PCR results with no clinical symptoms [7]. Besides, In January 2020, a cluster of 5 patients in Anyang China with no traveling history were reported, this transmission occurred due to contact with another family member who was asymptomatic and had traveled from Wuhan, the epicenter [8]. Her first RT-PCR test came negative on Jan 26 2020, but after two days on Jan 28 2020 the RT-PCR test came positive [8]. This fluctuation in test results could cause a catastrophe outcome and raises a big query towards the quality of the kit used or the sample that was collected.

There are about 80% of the patients that show few or no symptoms after the infection which makes the situation even more complex for the health care workers worldwide and diverts their focus. [12]. To check out for asymptomatic patients, there are some recommendations that are necessary to be done i.e. take at least two upper respiratory tract samples 24 hours apart for virus clearance; if the patient has symptoms then the test should be done after 7 days or within 3 days if he develops no fever; for the asymptomatic patient, 14 days has to be the time period to perform the test [10]. To isolate all asymptomatic COVID-19 positive patients, the provincial government of Sindh, Pakistan took the initiative of setting up a Field Isolation Centre in Karachi at the Expo center on 6th April 2020 while strictly notifying hospitals to keep patients with severe symptoms in their own hospitals isolation ward respectively.[11]. According to the CDC China, the patients with the follow conditions can be discharged 1) Afebrile for 3 days, 2) Improved respiratory symptoms, 3) pulmonary imaging showing obvious absorption of inflammation, and 4) nucleic acid tests negative for respiratory tract pathogen twice consecutively (sampling interval \geq 24 hours) [10]. According to the CDC USA, to discharge any patient the following criteria should be considered; two test to be taken that should be continuous in which nasopharyngeal and throat swabs to be collected in less than 24 hours apart from the patient in COVID-19, four negative specimen should be in total and there should be improvement in different signs of illness and symptoms without the use of antipyretic medication. [10].

Screening of asymptomatic infections must be stepped up, health worker should target close contacts individuals of confirmed COVID-19 patients. If any asymptomatic carriers are detected then hospitals and disease control departments should take all necessary action promptly. The world is fighting and desperately waiting to win the war against this deadly virus.



References

1. Ng MY, Lee EY, Yang J, Yang F, Li X, Wang H, Lui MM, Lo CS, Leung B, Khong PL, Hui CK. Imaging profile of the COVID-19 infection: radiologic findings and literature review. *Radiology: Cardiothoracic Imaging*. 2020 Feb 13;2(1):e200034.
2. Velavan TP, Meyer CG. The COVID-19 epidemic. *Trop Med Int Health*. 2020 Feb 12;25(3):278-80.
3. WHO COVID-19 Dashboard [Internet]. Who.sprinklr.com. 2020 [cited 10 April 2020]. Available from: <https://who.sprinklr.com/>
4. COVID-19 Health Advisory Platform by Ministry of National Health Services Regulations and Coordination [Internet]. Covid.gov.pk. 2020 [cited 10 April 2020]. Available from: <http://covid.gov.pk/stats/pakistan>
5. Coronavirus: The danger that asymptomatic coronavirus patients pose [Internet]. The News International. 2020 [cited 10 April 2020]. Available from: https://www.thenews.com-pk.cdn.ampproject.org/v/s/www.thenews.com.pk/amp/632991-coronavirus-the-danger-that-asymptomatic-coronavirus-patients-pose?amp_js_v=a3&_gsa=1&usqp=mq331AQFKA GwASA%3D#aoh=15865283898281&referrer=https%3A%2F%2Fwww.google.com&_tf=From%20%251%24s&share=https%3A%2F%2Fwww.thenews.com.pk%2Flatest%2F632991-coronavirus-the-danger-that-asymptomatic-coronavirus-patients-pose
6. Sindh minister Saeed Ghani tests positive for coronavirus [Internet]. DAWN.COM. 2020 [cited 10 April 2020]. Available from: <https://www.dawn.com/news/1543165>
7. Pan X, Chen D, Xia Y, Wu X, Li T, Ou X, Zhou L, Liu J. Asymptomatic cases in a family cluster with SARS-CoV-2 infection. *The Lancet Infectious Diseases*. 2020 Apr 1;20(4):410-1.
8. Bai Y, Yao L, Wei T, Tian F, Jin DY, Chen L, Wang M. Presumed asymptomatic carrier transmission of COVID-19. *Jama*. 2020 Feb 21.
9. With 'Containment' Increasingly Infeasible, Physicians Offer a COVID-19 Mitigation Strategy [Internet]. ContagionLive. 2020 [cited 10 April 2020]. Available from: <https://www.contagionlive.com/news/with-containment-increasingly-infeasible-physicians-offer-a-covid19-mitigation-strategy>
10. Ecdc.europa.eu. 2020 [cited 10 April 2020]. Available from:

- <https://www.ecdc.europa.eu/sites/default/files/document/s/COVID-19-Discharge-criteria.pdf>
11. Sindh to refer patients with no or mild COVID-19 symptoms to Expo Centre Karachi [Internet]. Geo.tv. 2020 [cited 10 April 2020]. Available from: <https://www.geo.tv/latest/281142-sindh-refers-asymptomatic-mild-symptomatic-covid-19-cases-to-expo-center-karachi>
 12. COVID-19: What proportion are asymptomatic? - CEBM [Internet]. CEBM. 2020 [cited 10 April 2020]. Available from: <https://www.cebm.net/covid-19/covid-19-what-proportion-are-asymptomatic/>
