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BRIEF COMMUNICATION

COVID-19 Infected Staff during the First Wave at General Out-Patient Clinic of Barau Dikko University Teaching Hospital, Kaduna: Brief Communication

Personnel Infecté par Covid-19 Pendant la Première Vague à la Clinique Générale Externe de l'Hpital D'enseignement Universitaire Barau Dikko, Kaduna : Communication Brève

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ABSTRACT

COVID 19 viral infection is a rapidly spreading droplets infection that has a global impact. Kaduna is one of the states in Nigeria with a high number of COVID-19 infected individuals. Some staff of Barau Dikko Teaching Hospital, Kaduna (BDTH) were infected with COVID-19 during the initial period of the pandemic. Most of the infected staff were from the General Out-Patient Clinic (GOPC), as it was the only Department with up to 11 staff infected during this initial period of the COVID-19 pandemic. This had led to the temporary closure of the Department. The aim of this paper is to characterize the GOPC Staff that tested positive to COVID-19 following previous contact with COVID-19 patients that were seen at the GOPC during the first wave of the pandemic. This is with the view to consider GOPC staff as high risk and frontline health workers for COVID 19. It was a retrospective study, and data were collected from the record of all the staff of the GOPC who were traced to have had contact with the COVID-19 positive patients and were also tested positive. Eleven (34%) out of the 32 staff were infected with COVID-19 at the GOPC. Only 1 staff was above 50 years. Most of them had mild symptoms and had side effects from the antiviral drugs. Staff of the GOPC are at risk of COVID-19 infection and should be considered frontline workers for COVID-19. WAJM 2021; 38(7): 705–708.

Keywords: **Covid 19, Staffs, GOPC.**

ABSTRAIT

L'infection virale COVID 19 est une infection par gouttelettes à propagation rapide qui a un impact mondial. Kaduna est l'un des États du Nigéria comptant un nombre élevé de personnes infectées par le COVID-19. Certains membres du personnel de l'hôpital universitaire Barau Dikko de Kaduna (BDTH) ont été infectés par le COVID-19 au cours de la période initiale de la pandémie. La plupart du personnel infecté provenait de la Clinique générale de consultation externe (GOPC), car c'était le seul département avec jusqu'à 11 membres du personnel infectés au cours de cette période initiale de la pandémie de COVID-19. Cela a conduit à la fermeture temporaire du département. Le but de cet article est de caractériser le personnel du GOPC qui a été testé positif au COVID-19 à la suite de contacts antérieurs avec des patients COVID-19 qui ont été vus au GOPC pendant la première vague de la pandémie. Ceci dans le but de considérer le personnel du GOPC comme des agents de santé à haut risque et de première ligne pour COVID 19. Il s'agissait d'une étude rétrospective, et les données ont été collectées à partir du dossier de tout le personnel du GOPC qui a été identifié comme ayant été en contact avec le COVID -19 patients positifs et ont également été testés positifs. Onze (34%) des 32 employés ont été infectés par COVID-19 au GOPC. Seul 1 membre du personnel avait plus de 50 ans. La plupart d'entre eux présentaient des symptômes bénins et des effets secondaires des médicaments antiviraux. Le personnel du GOPC est à risque d'infection au COVID-19 et doit être considéré comme un travailleur de première ligne pour le COVID-19. **WAJM 2021; 38(7): 705–708.**

Mots-clés: Covid 19, Personnels, GOPC.

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Abbreviations:

INTRODUCTION

Coronaviruses are enveloped RNA viruses that cause respiratory illnesses of varying severity from the common cold to fatal pneumonia.[1] In December 2019, a pneumonia outbreak was reported in Wuhan, China.[2] On 31st December 2019, the outbreak was traced to a novel strain of coronavirus,[3] which was given the interim name 2019-nCoV by the World Health Organization (WHO).[4] The incubation period varies between 2-14 days (median of 5 days), and the infection is transmitted mainly by inhalation of droplets or touching contaminated surfaces and then touching the mouth, nose, and eyes.[5]

In addition, most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment.[2,6,7] The clinical features of COVID 19 varies from asymptomatic to mild symptomatic illness to life-threatening pneumonia and multi-organ dysfunction. The common clinical features are fever, cough, malaise, fatigue, headache, and breathlessness, hence they are indistinguishable from other common respiratory viral infections.[5] Severe disease and adverse outcomes such as pneumonia, acute respiratory distress syndrome, acute kidney injury, and death are seen in the elderly and individuals with comorbid conditions such as hypertension, respiratory and cardiac diseases, diabetes, cancer, etc. [5,8,9]

Diagnosis is made by Real-time reverse transcriptase-polymerase chain reaction (RT-PCR) using upper and lower respiratory secretions.[5,10,11] Workers in healthcare facilities are among the high priority groups for COVID-19 testing.

During the initial period (first wave), early to mid-2020, there weren't enough scientific researches in the domain of COVID-19 treatment. Though, the treatment was mainly supportive,[5] various states of Nigeria had their different regimens for the treatment of confirmed cases. In Kaduna, during the first wave, Alluvia was among the drugs used in managing COVID 19 patients. It is an antiretroviral agent that consists of lopinavir and Ritonavir. Other antiviral agents have been used since the onset of the pandemic.

Remdesivir was the first antiviral drug that was approved for human use recently. A study has shown faster recovery of hospital admitted COVID-19 patients treated with remdesivir compared with placebo treatment.[12] Hydroxychloroquine, an antimalarial drug, is reported to be effective in treating COVID-19 associated respiratory complications. However, several scientists expressed doubt about the benefits of hydroxychloroquine in treating COVID-19, and suggested that it requires further large scale studies before it can be recommended for use.[13]

Furthermore, in the United States, during the first wave, the antiviral agent remdesivir was made available through an FDA emergency use authorization for patients with severe disease (defined as requiring supplemental oxygen, ventilatory, or extracorporeal membrane oxygenation [ECMO] support). Other drugs that have been used include chloroquine derivatives, azithromycin, and antiretrovirals. There were also insufficient data to support the use of any of these agents outside of clinical trials; the toxicities associated with chloroquine and hydroxychloroquine led to an FDA warning that they should not be used outside of the hospital setting or a clinical trial.[14]

At the time of this study, there weren't many published reports in Nigeria on COVID-19 infection among contacts of COVID-19 patients in the general outpatient setting. Hence, this initial study aimed to assess the characteristics of staff who contracted COVID-19 infection among contacts of COVID-19 patients seen at the GOPC of our facility.

METHODOLOGY

The study was a retrospective study. Data were extracted from the patients' record in the Isolation centre. All GOPC staff who had contact with COVID-19 positive patients that passed through the GOPC were traced through contact tracing and screened for COVID-19 infection. Those who tested positive (both symptomatic and asymptomatic) were recruited into the study. Data obtained from their records included: age and sex of the infected staff, whether symptomatic or asymptomatic; if symptomatic, which symptoms they presented with, whether admitted in isolation centre or self-isolated at home. This was because, during the initial phase of the pandemic, there was the option of self-isolation at home especially in asymptomatic cases. Other data extracted from their record included: whether their family member(s) was/were infected, drugs used in their treatment and for those on Alluvia, whether there was any side effect associated with its use. The reason for being specific with Alluvia was because, based on the experience in the isolation centre, many patients reacted to Alluvia and for the GOPC staff admitted to the isolation centre, the side effects were attributed to Alluvia because when the Alluvia was withdrawn from their regimen, the side effects resolved.

Ethical clearance was obtained from the ethical committee of BDTH, Kaduna. Data were analysed with Microsoft excel.

RESULTS

Eleven (34%) out of the 32 staffs (15 doctors, 8 nurses, 4 attendants and 5 record staffs) in the GOPC of BDTH, Kaduna tested positive to COVID 19 infection between June and August 2020. Six doctors, 3 nurses and 2 attendants tested positive. Six were females and 5 were males. Their mean age was 40years (age range: 28–50years). Only one staff (9%) was above 50years.

Symptoms presented by some COVID 19 Positive Staff of GOPC

Eight staffs (72%) presented with one or more symptoms. The common symptoms were headache, running nose and chest pain among the doctors. The nurses and attendants presented with more symptoms such as anosmia, cough, dyspnea etc.

Table 1 shows the symptoms presented by the staff:

Table 1: Symptoms presented by some of the COVID 19 positive GOPC staff

Symptoms	Frequency(%)
Fever	2 (18)
Collapse	1 (9)
Headache	3 (27)
Running nose	3 (27)
Chest pain	3 (27)
Cough	1(9)
Dyspnea	2 (18)
Anosmia	1 (9)

Note: some staff had more than 1 symptom

Co-morbidities among the infected staff:

Among the infected staffs only 1 (9%) was asthmatic, 5 (45%) were hypertensive and none was diabetic. The remaining 5 (45%) had no co-morbidities. This is shown in Figure 1 below:

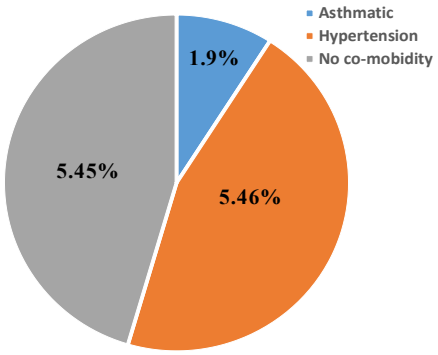

Fig. 1: Co-morbidities among the Infected Staff

Admission at Isolation Centre

Five (45%) infected staffs were admitted to the isolation centre (nurses and attendants) and 6 (55%) went on self-isolation (doctors).

COVID 19 infection among family members of infected staff

Only 3 (27%) out of the 11 staffs had their family members infected (a mother, a son and a wife). The 3 staffs were doctors who went on self-isolation.

Drugs used in the treatment of infected staff

The drugs used for the treatment of all the infected staff (admitted and on self- isolation) were: Alluvia (lopinavir + Ritonavir), zinc tablets, vitamin B complex and vitamin C. Other drugs used were Azithromycin and Augmentin depending on the indication.

Side effects experienced by those treated with the regimen containing Alluvia

Majority of the infected staff, 8 (73%) experienced one or more side effects with Alluvia. The common side effects experienced were diarrhoea and generalized body weakness.

This is depicted in Table 2 below:

Table 2: Side effects experienced by those treated with the regimen containing Alluvia

Symptoms	Frequency(%)
Diarrhoea	5(45)
General body weakness	5(45)
Insomnia	2(18)
Dizziness	3(27)
Headache	1(9)
Nausea	1(9)
Loss of appetite	1(9)
No side effect	2(18)

Outcome of the infection among the infected staff

All infected staff, irrespective of their symptoms got better after 14 days of isolation and management. Those that experienced severe side effect with Alluvia were asked to stop Alluvia, and they were much better thereafter.

DISCUSSIONS

This report characterized GOPC staff who tested positive to COVID-19 following contact with COVID-19 patients seen in the GOPC. It demonstrates that GOPC Staff are at risk of contracting COVID-19 infection. This is because, GOPC is the first contact clinic where undifferentiated cases as well as asymptomatic patients are seen during the incubation period of many infections. Though more than 80% of people with COVID-19 are asymptomatic world-wide,[2,6,7] in this study only 28% were asymptomatic, 72% presented with one symptom or the other. The findings of more symptomatic than asymptomatic in this study contrary to the literature could be due to the small sample size of our study.

Headache, running nose and chest pain were the common symptoms presented. COVID 19 is known to cause symptoms varying from common cold to fatal pneumonia;[2,6,7] this agrees with the symptoms presented by the infected staff in this study.

The nurses and attendants presented with more symptoms than doctors. While there is a complex balance of host- and pathogen-associated factors in the presentation of an infectious disease, this occurrence could be because, during the initial period, doctors observed the COVID 19 protocols more than staff of other cadre.

Physical distancing is an important strategy in reducing the risk of COVID 19.[15] Doctors observed self-isolation in their homes due to their less severe symptoms. However, the nurses and attendants were managed at the isolation centre because they presented with more severe symptoms. As a result of the self-isolation at home, the family members of the doctors were exposed to more risk of being infected with the virus as 3 (27%) family members (each from a different family) were infected. On the other hand, the family members of the nurses and attendants were not infected during that period. This could be due to their separation from their family members during their management. Self-isolation is most effective when recommended protocols are observed.[15]

CONCLUSION

COVID 19 spread rapidly among health workers. Staff of the GOPC are at risk of COVID-19 infection and should be considered frontline workers for COVID-19. There is a need to intensify all the preventive measures in this setting.

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