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# Clinical profile of COVID-19 patients managed in Uyo, Akwa Ibom State

Sylvanus B. Udoette[1], Asukwo E. Onukak[1], Grace E. Peters[2], Anyiekere M. Ekanem[3], Victor A. Umoh[4]

[1]*Department of Internal Medicine, University of Uyo Teaching Hospital, Uyo, Akwa Ibom State, Nigeria*
[2]*Department of Nursing Services, University of Uyo Teaching Hospital, Uyo, Akwa Ibom State, Nigeria*
[3]*Department of Community Health, University of Uyo, Uyo, Akwa Ibom State, Nigeria*
[4]*Department of Internal Medicine, University of Uyo, Uyo, Akwa Ibom State, Nigeria*

## Abstract

**Background:** Coronavirus disease 2019 (COVID-19) is an acute viral infection caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). Although COVID-19 is predominantly a respiratory infection, the clinical manifestations of the disease can be variable, ranging from asymptomatic infection to critical illness. The disease was first reported in Nigeria in February 2020 and in Akwa Ibom State in April 2020. Being a novel disease, knowledge of its clinical manifestations has continued to evolve over the last one year and this study described the characteristics of all the patients hospitalized in the first six months of the pandemic in the state. This could improve case detection and early diagnosis.
**Methods:** This was a retrospective study of patients with COVID-19 managed in the Isolation Centre in Akwa Ibom State, Nigeria from April 1 - September 30, 2020. Socio-demographic and clinical characteristics of the patients were recorded using a proforma. Descriptive statistics of the variables was done using the statistical package for social sciences (SPSS) version 23.
**Results:** One hundred and forty-seven patients were admitted during the study period. The majority (70.1%) of the patients were males. The most common symptoms of COVID-19 were fever (38.1%), cough (31.3%) and anosmia (28.3%). There was no statistically significant gender difference in the clinical features of the patients.
**Conclusion:** COVID-19 infection is more common in male patients in Akwa Ibom State. Fever, cough and anosmia are the three most common symptoms of COVID-19 in hospitalized patients in the state.

Keywords: COVID-19, Clinical profile, Southern Nigeria

## Introduction

Coronavirus disease 2019 (COVID-19) is a multi-systemic viral infection caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) that was first reported in Wuhan, China in December 2019 when series of patients with pneumonia of unknown were noted.[1] Further analysis of the respiratory tract samples of these initial patients revealed a novel coronavirus which was initially named 2019 novel coronavirus (2019 nCoV) but was later renamed SARS-CoV-2 by the International Committee on taxonomy of viruses.[1] Coronavirus disease 2019 was declared a pandemic by the World Health Organisation in March 2020. Since onset in China the disease has spread to over 200 countries and territories affecting over 45 million people and causing over 1.1 million deaths as of November 1, 2020.[1-2] The virus is spread mainly via respiratory droplets with transmission

**Corresponding Author: Dr. Sylvanus Udoette**

***Department of Internal Medicine,***
***University of Uyo Teaching Hospital,***
***Uyo, Akwa Ibom State, Nigeria***
***E-mail: sylvanusudoette@yahoo.com, Phone: +2348066501141***

occurring from both symptomatic and asymptomatic patients.[1] In Nigeria, the first case of COVID-19 was reported in Lagos State in February 2020, and since then the disease has been reported in all the states.[3-4] In Akwa Ibom state, the first five cases were recorded in April 2020, and as of November 1, 2020, over 200 cases have been reported in the state.

It is believed that the angiotensin-converting enzyme 2 (ACE2) is the human cell receptor for the virus to bind using its surface spike proteins. The ACE2 is expressed on the plasma membrane of some cells especially in the lower respiratory tract, the heart, the vascular endothelium, the gut and the kidneys.[1] This may explain the widespread clinical manifestations of this viral infection. Clinical features of COVID-19 include fever, cough, difficulty in breathing, chest pain, muscle pain, fatigue, sore throat, headache, vomiting, diarrhoea, loss of sense of smell and loss of sense of taste.[5] Huang et al. described the first 41 patients admitted in Wuhan at the beginning of this pandemic. Fever (98%), cough (76%), difficulty in breathing (55%) and fatigue (44%) were the most common features in the first cohort of patients with COVID-19. Other less common features were headache (8%), haemoptysis (5%) and diarrhoea (3%).[6] In a larger study in China, the most common clinical features were fever (91.3%), cough (67.7%), fatigue (51%) and difficulty in breathing (30.4%).[7] In Nigeria, the most common presenting symptoms are fever (59.4%), cough (43.8%), fatigue (21.9%), anosmia (18.8%) and ageusia (18.8%).[5] The first published study in Nigeria included only the first 32 patients managed in Lagos, Nigeria.[5] Since then, other studies highlighting the clinical manifestations of COVID-19 in Nigeria have been undertaken especially in South West Nigeria.[8-10]

As the virus continues to spread, COVID-19 is perhaps the biggest threat to public health globally at this point.[11] In view of the speed of propagation of the virus, its potential to cause large scale mortality and morbidity as well as its economic impact[11], it has therefore become necessary to fully evaluate the characteristics of patients managed in South South Nigeria as this will help improve case finding and management.

## Methods

**Study Design:** This was a retrospective study of patients with confirmed COVID-19.

**Study Population:** All confirmed COVID-19 patients who were managed at the Ibom Multispecialty Hospital, Uyo, Akwa Ibom State from April 1, 2020 to September 30, 2020 were enrolled on this study.

**Study Setting:** This study was conducted at the Ibom Multispecialty Hospital, Uyo, Akwa Ibom State

**Ethical Approval:** Ethical approval for this study was obtained from the Health Research Ethics Committee of Ibom Multispecialty Hospital, Uyo, Akwa Ibom State. Patients' confidentiality was ensured.

**Diagnosis of COVID-19:** All the participants in this study were patients who had SARS-CoV-2 detected using reverse transcription polymerase chain reaction.

**Data Collection:** A proforma was used to obtain socio-demographic characteristics of the patients such as age and sex from the case notes of the patients. The clinical features of the patients were also recorded on the proforma.

**Data Analysis:** The data was analysed using Statistical Package for the Social Sciences (SPSS) version 23 (Chicago, IL, USA). Qualitative data was reported as percentages while quantitative variables were reported as mean ± standard deviation (SD).

## Results

One hundred and forty-seven patients were admitted with confirmed COVID-19 during the study period. There were 44 (29.9%) female and 103 (70.1%) male participants. The mean age ( and SD) of the patients was 41.5 (11.8) with a range of 11 - 63 years. More than half (52.4%) of the patients were between 21 - 40 years. The most common symptoms of COVID-19 in our patients were fever (38.1%), cough (31.3%), anosmia (28.3%), difficulty in breathing (19.7%) and ageusia (13.6%). Gastrointestinal symptoms were rare as only one patient had vomiting and one patient had diarrhoea. A few patients also had sore throat (7.5%) and chest tightness (5.4%). In female patients the three most common symptoms were fever (29.5%), anosmia (25%) and cough (15.9%) whereas in male patients fever (41.7%), cough (37.9%) and anosmia (23.3%)

**Table 1: Characteristics of the study population**

| Variable | Total (N = 147) n (%) | Female (N = 44) n (%) | Male (N = 103) n (%) | $X^2$ | P value |
|---|---|---|---|---|---|
| **Age (years)** | | | | | |
| 1 - 20 | 2 (1.4) | 1 (2.3) | 1 (1) | 4.844 | 0.184 |
| 21 - 40 | 77 (52.4) | 27 (61.4) | 50 (48.5) | | |
| 41 - 60 | 59 (40.1) | 12 (27.3) | 47 (45.6) | | |
| 61 - 80 | 9 (6.1) | 4 (9.1) | 5 (4.9) | | |
| **Fever** | | | | | |
| Yes | 56 (38.1) | 13 (29.5) | 43 (41.7) | 1.947 | 0.163 |
| No | 91 (61.9) | 31 (70.5) | 60 (58.3) | | |
| **Cough** | | | | | |
| Yes | 46 (31.3) | 7 (15.9) | 39 (37.9) | 6.912 | **0.008** |
| No | 101 (68.7) | 37 (84.1) | 64 (62.1) | | |
| ***Chest tightness** | | | | | |
| Yes | 8 (5.4) | 4 (9.1) | 4 (3.9) | | 0.241 |
| No | 139 (94.6) | 40 (90.9) | 99 (96.1) | | |
| **Anosmia** | | | | | |
| Yes | 35 (28.3) | 11 (25) | 24 (23.3) | 0.049 | 0.825 |
| No | 112 (71.7) | 33 (75) | 79 (76.7) | | |
| **Ageusia** | | | | | |
| Yes | 20 (13.6) | 6 (13.6) | 14 (13.6) | 0.0001 | 0.994 |
| No | 127 (86.4) | 38 (86.4) | 89 (86.4) | | |
| **Dyspnea** | | | | | |
| Yes | 29 (19.7) | 6 (13.6) | 23 (22.3) | 1.471 | 0.225 |
| No | 118 (80.3) | 38 (86.4) | 80 (77.7) | | |
| **Sore throat** | | | | | |
| Yes | 11 (7.5) | 4 (9.1) | 7 (6.8) | 0.235 | 0.628 |
| No | 136 (92.5) | 40 (90.9) | 96 (93.2) | | |
| ***Vomiting** | | | | | |
| Yes | 1 (0.7) | 0 (0) | 1 (1) | | 1.000 |
| No | 146 (99.3) | 44 (100) | 102 (99) | | |
| ***Diarrhoea** | | | | | |
| Yes | 1 (0.7) | 1 (0.7) | 1 (1) | | 1.000 |
| No | 146 (99.3) | 146 (99.3) | 102 (99) | | |

The number in bold represent significant value, $X^2$ = chi square, * = Fisher exact test.

were the most common symptoms. Male patients were more likely to have cough than female patients. This difference was statistically significant (p = 0.008). There was however no statistically significant gender difference in other clinical symptoms. Table 1 shows details of the characteristics of the study population.

## Discussion

Most of our patients were males. This is consistent with findings from other parts of Nigeria as well as studies in Asia, Europe, North and South America.[4,8-10,12-15] Males are slightly more susceptible to infection with SARS-CoV-2 and are more likely to have a more severe course of COVID-19.[16] It has been

noted that the outcome of COVID-19 tends to be worse in men than women, similar to what was observed in the other severe coronavirus infections (SARS and MERS).[16] There are varying reports on gender difference in COVID-19 prevalence with most studies showing a higher prevalence in male patients.[17] This difference have been attributed to physiologic and lifestyle reasons.[18] Some of the physiologic reasons for the lower susceptibility of women to COVID-19 include the modulatory effects of the X chromosome and sex hormones on the innate and adaptive immune system.[17] The ACE2 is also believed to be more expressed in male patients leading to a higher susceptibility in men.[17] Some lifestyle risk factors for COVID-19 such as smoking and alcohol abuse are more common in men.[18]

Our study found a higher frequency of cough in male patients. This finding may not be a true reflection of a possible gender difference in COVID-19 symptoms as the sample size was small. Most studies have been focused on the gender difference in COVID-19 susceptibility, severity and outcomes.[17-18] More studies are needed to unravel the possibility of gender difference in the symptoms experienced by patients with COVID-19.

Although the Nigerian Centre for Disease Control (NCDC) recognises fever, cough and difficulty in breathing in the case definition of COVID-19[19], anosmia was more common in our patients than difficulty in breathing. A similar finding was reported by Bowale et al in Lagos, Nigeria.[5] Our finding is also similar to what was reported in a meta-anlysis involving 24410 participants from 9 countries. In that study, inability to perceive smell was more common than difficulty in breathing.[20] There is a need for clinicians to have a high index of suspicion when evaluating patients with new-onset anosmia.

Most (62%) of the patients with COVID-19 in our study did not have a history of fever. This suggests than the practice of using temperature checks only to screen individuals for possible COVID-19 before entry into public spaces may not be sufficient to curtail the spread of the infection as many of those with the infection may not have fever. Case definitions and surveillance strategies based on the presence of fever alone may miss several afebrile COVID-19 patients.[5,14] Relying on the presence of fever alone or any other symptom may be misleading as many patients with COVID-19 may be asymptomatic.[9]

The spectrum of clinical features seen in our patients is similar to what has been reported in other parts of Nigeria and in Pakistan, China and Brazil. Fever and cough are the most common features of COVID-19.[5-6,12,14,21] Difficulty in breathing has been suggested as a predictor of mortality in patients with COVID-19.[22-23] Knowledge of the proportion of patients who present with difficulty in breathing will help in planning for patients' care and help reduce mortality of COVID-19 patients.[24]

The relatively small sample size was a limitation of this study. This study only describes the clinical characteristics of patients with COVID-19 who were managed in the hospital and may not be a true reflection of the clinical characteristics other patients with COVID-19 in the state that were managed at home.

We recommend that a larger multicentre is needed to fully describe the clinical characteristics of COVID-19 patients in Nigeria.

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