International Journal of Advanced Research in Biological Sciences
ISSN: 2348-8069
www.ijarbs.com
(A Peer Reviewed, Referred, Indexed and Open Access Journal)
DOI: 10.22192/ijarbs Coden: IJARQG (USA) Volume 9, Issue 6 -2022

Research Article

DOI: http://dx.doi.org/10.22192/ijarbs.2022.09.06.013

Epidemiological and clinical profile of patients with Covid-19 in the city of Lubumbashi

Kisoka Kimbungu Thierry[1], Kakoma Placide [1], Yumba Georges[1], Tshiami Eugenie[1], Mulongo Onesime[3], Tamubango Kitoko hermann[3,4], Kisaka Banza Gaetan[2], Assumani N'simbo[5], Emmanuel Muyumba[1]

[1]Department of Internal Medicine, University Clinics of Lubumbashi,
Faculty of Medicine of the University of Lubumbashi, Lubumbashi, DRC
[2]Department of Public Health, Faculty of Medicine, University of Lubumbashi, Lubumbashi, DRC
[3]Department of Gynecology and Obstetrics, University Clinics of Lubumbashi,
Faculty of Medicine of the University of Lubumbashi, Lubumbashi, DRC
[4]Department of Midwifery, ISTM-LIKASI, Likasi, DRC
[5]Department of Paediatrics, Faculty of Medicine, University of Lubumbashi, Lubumbashi, DRC

Abstract

Introduction: This study aims to describe the epidemiology and clinical signs of covid-19 patients in the health structures of the city of Lubumbashi.

Methodology: This is a cross-sectional descriptive study based on a collection of retrospective data from 2959 cases covering the period from July to September 2021. Data entry was done with EXCEL software and the analysis was was carried out using the EPI INFO VERSION 7.2.2.6 software.

The data was collected in the health structures of the city of Lubumbashi, Democratic Republic of Congo.

Results: In our study, the male sex was dominant with 53.6% and a sex ratio of 1.15; the average age was52.4±17.6year; the liberal profession was found more with 51.7% of cases; the main comorbidities were hypertension (31%), diabetes (15%) and respiratory disease (1.3%);The most common clinical signs werefever (63.3%), cough (61.4%) and dyspnea (46.4%); The mild form of covid-19 was more represented with 89.1%; We noticed that 20.4% of death cases were covid-19 cases with moderate and severe form.

Conclusion: SARS COV2 disease in our environment was observed in men with an average age of more than 50 years carrying out a liberal profession. Hypertension and diabetes, associated or not, were the comorbidities found. On the whole the symptomatology was made up of fever, cough and dyspnoea. The mild form was the most encountered but deaths were linked to the severe form. Although underdiagnosed in our environment, SARS COV2 disease still remains a panacea in developing countries such as ours.

Keywords: covid-19, health structures in the city of Lubumbashi, clinical signs

Introduction

Covid-19 is a viral disease secondary to SARS-CoV-2 belonging to the beta-coronavirus family. This virus is genetically similar to those responsible for Severe Acute Respiratory Syndrome (SARS) 2003 and Middle East Respiratory Syndrome [1]. It was discovered at the end of December 2019 in the city of Wuhan in China where people showed severe pneumonia (eg fever, cough, dyspnea and hemoptysis) [2.3]. The WHO declared in 2020 the current SARS-CoV-2 pandemic as a public health emergency of international concern. According to forecasts made from data received from affected countries from the start of the pandemic, 40% of cases will develop mild illness, 40% will suffer from moderate forms of illness, including pneumonia, while 15% of cases will suffer serious forms of illness, and the remaining 5% will be listed as critical cases of covid-19[2].

There have been more than 21 million cases worldwide in 2020 with more than 700 thousand deaths since the start of this pandemic in December 2019. In Africa, the toll of the disease as of July 31, 2020, published by the African Center for Disease Control and Prevention (AFRICA CDC) reported 908,931 cases and 18,884 deaths, i.e. a case fatality rate of 0.5%[1].

In the Democratic Republic of Congo (DRC), we have recorded since the start of the epidemic, 12,179 confirmed cases, including three hundred and twenty-eight deaths, representing an overall lethality of 2.7%.[4]. Larger series of studies confirm the mild character (asymptomatic) without treatment the patient recovers quickly. In 15% of moderate to severe cases. In 5% of the cases of the patients are serious thus endangering the life[4]. Several studies show the most typical clinical presentation of COVID-19 which is that of a febrile respiratory infection with dry cough, dyspnea, fatigue and myalgias.[5]. In the Democratic Republic of the Congo, despite the efforts made to improve the health of the general population, cases of covid-19 have often been observed in the elderly. This study aims to determine the epidemiological and clinical profile of covid-19 in the city of Lubumbashi.

Methods

This was a descriptive cross-sectional study carried out in the health structures of the city of Lubumbashi for a period of 4 months from June 1, 2021 to September 31, 2021. The city of Lubumbashi is a city in the DRC located near from the border with Zambia. In these structures, the sorting of suspected cases is carried out, without distinction of age and sex.

During this study, all patients aged 16 and over (suspected or suffering from covid-19) received in consultation in the health structures of the city of Lubumbashi were included. The case admission criteria were as follows: confirmed cases (cases presenting at least one clinical sign either a cough, or a runny nose, difficulty breathing, fever, etc.) with a positive rapid diagnostic test or RT-PCR and excluded are those whose rapid diagnostic test or RT-PCR was negative or was not performed.

The rapid diagnostic test or RT-PCR at covid-19 was carried out from nasopharyngeal swabs.This test has a sensitivity of <60% and a specificity of 99.5%. It is positive in patients with a high viral load (corresponding to a Ct of < 25). Its low sensitivity therefore constitutes a major handicap for use aimed at detecting all COVID-suspect cases.A pre-established structured survey sheet made it possible to collect the socio-demographic data of the patients (Ages, sex, origin by municipality, profession of the patients); clinical data (pathological history of patients, reasons for consultation, clinical cases found). The data was entered and processed using the EPI info 7.2.2.6 software then presented in the form of tables using Word and Excel software from the 2010 office pack. The qualitative variables were expressed as a percentage and the quantitative variables on average with the extremes. The anonymity and confidentiality of the information collected has been preserved.

Results

Out of a set of 2,959 cases with the stigma of being infected with COVID-19, 1,276 cases tested positive, i.e. a frequency of 43.1% of positive cases.

Table.1. Socio-demographic characteristics of patients with covid-19

Variables	Workforce (n=1276)	Percentage
Middle age	52.4±17.6	15-90
<40 years	348	27.3
40-59 years old	468	36.7
≥60 years old	460	36.1
Sex		
Male	684	53.6
Feminine	592	46.4
Occupation		
Official	408	32.0
Liberal	660	51.7
Student	144	11.3
Health professional	64	5.0

It appears that 468 cases or 36.7% had an age range between 40 and 59 years and an average age of 52.4 ± 17 years; 684 cases (53.6%) were male, i.e. a sex ratio of 1.15; 660 cases (51.7%) had a liberal profession.

Table.2. Clinical characteristics of patients with covid-19

Variables	All n=1276	Percentage
Symptoms		
Fever	808	63.3%
Cough	784	61.4%
Rhinorrhea	742	37%
Dyspnea	592	46.4%
stiffness	452	35.4%
Sore throat	344	27%
Headache	340	26.6%
Vomiting	176	13.8%
Nausea	172	13.5%
Diarrhea	76	6%
Background		
hypertension	396	31%
Diabetic sugar	192	15%
Concept of contact	24	1.9%
Respiratory diseases	16	1.3%

This table shows us that 808 cases or 63.3% of patients had fever and 784 cases or 61.4% of patients had cough at the consultation; hypertension was the most common history found in patients with covid-19 and the notion of contact was found in 1.9% of cases.

This figure shows us that 89.1% of cases had a mild or asymptomatic form of covid-19 and 9.7% had a moderate form.

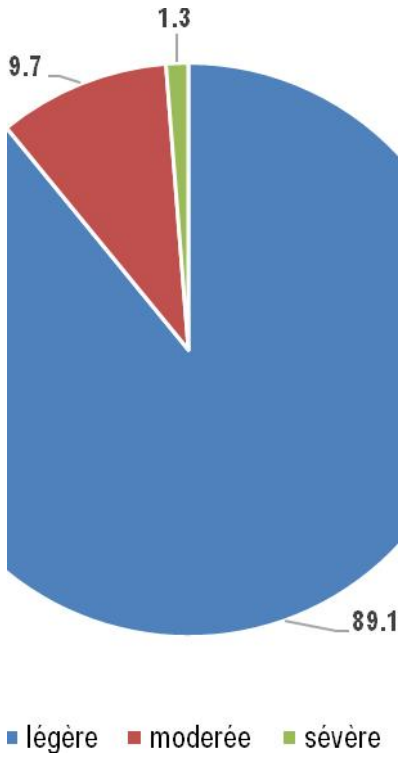

Fig. 1. Distribution of cases according to the clinical form of covid-19

It appears that 20.4% of patients with moderate and severe covid-19 had died

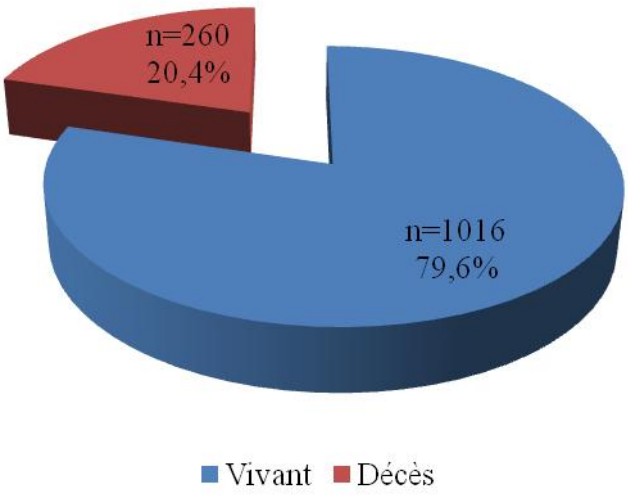

Fig.2. Vital patient outcomes

Discussion

Our study shows a frequency of 43% of positive cases of covid-19, almost the same as in Mexico, which is one of the countries with a high incidence rate of SARS-CoV-2 (43%) only behind Argentina (65%); meanwhile, other countries like the USA with a high number of confirmed cases (16million cases) have a lower incidence (7%)[6].

During our study, positive cases were higher in 53.6% of male patients, i.e. a sex ratio of 1.15in favor of men. This is comparable to the results found in several studies, a study byDonamou et al., in 2021, demonstrated thatIhe majority of covid-19 patients in 79% of cases were male and in another study by Bouchareb et al., in 2022 found a male predominance with 61.7% of cases, and this shows a resemblance of the result found.[7–9]. This result can be explained by the fact that the man is generally the financial source of families in Africa, which makes him more exposed and generally in contact with a higher number of cases and he exposes himself to a higher risk of contamination than women, who are more often confined to the role of housewife, and therefore sedentary[7].

It appears in our study that 36.7% of the cases had an age range between 40 and 59 years and an average age of 52.4 ± 17 years; This is comparable to a study by NAFTI et al, in 2021 which had shown that the average age of patients was 67.96 years ± 13.309. Astudy by Bouchareb et al. in 2022,showed that the average age of patients was borderline 42.5 years, with ages ranging from 18 to 71 years. These authors found that the rate of covid-19 increased in a worrying way in patients with more advanced age.[7.10]

Our study showed that most cases had a liberal profession (51.7%) followed by civil servants (32%). This result is different from that found in a study by Joseph Donamou et al. in 2020 had found that the first serious cases were recorded among senior state officials, that is, among the privileged class who travel a lot.[11]. This result is explained by the fact that the majority of the population have a liberal job which makes them very mobile in search of daily bread to feed the family, thus explaining the high frequency of cases of contamination.

Most of the covid-19 cases in our study had fever (63.3%), cough (61.4%) and dyspnea (46.4%) as the main clinical signs at the consultation, but the other signs were also inaugural symptoms such as rhinorrhea (37%), body aches (35.4%), sore throat (27%), headache (26.6%), vomiting (13.8%), nausea (13, 5%) and diarrhea (6%). This is comparable to a study by Bouchareb et al., in 2022, which showed that the most frequent symptoms were dyspnea (79.6%), asthenia (76.7%), cough (61.25 %), and fever (57.9%) and a study by NAFTI et al, in 2021 noted that the cardinal signs of COVID-19 associated a fever above 37.5°C (88.74%), cough (67.81%), sputum (23–41.3%) and dyspnea (18.7–39.8%), which occurred in the first days of infection. In addition, myalgia was frequent (14.9–32.3%) and digestive signs could be inaugural, such as diarrhea (3.85%) and nausea/vomiting.[10]

Our study shows that 89.1% of cases had a mild or asymptomatic form of covid-19.9, the moderate form had 9.7% and severe with 1.3%. This joins the data published by Benpouka et al, 2020, that the clinical stage of covid-19 was more dominated by the mild form with 81% of cases. [12].

Hypertension was the most found comorbidity with 31% of cases in our study, followed by diabetes with 15% of cases and also respiratory disease in 1.3% of cases. This is almost comparable to a study by Bouchareb et al., in 2022, which found that the most common comorbidities in deceased patients were hypertension (53%), diabetes (55.1%), ischemic heart disease (36.53%) and chronic respiratory disease (14.28%), it was also noted the presence of other aggravating factors that have not been previously described in people with confirmed infection by COVID- 19, it is cerebral-vascular diseases (10.2%), obesity (6.12%), Alzheimer's disease (6.2%). According to a systematic analysis of 637 cases of MERS-CoV,[12,13]

Of all the confirmed cases of covid-19 in our study, it appears that 20.4% of cases with severe covid-19 died. Confirmed cases of severe form covid-19 shows comparable indicator to published data worldwide[7].

Conclusion

The third wave of the pandemic seems to have seriously affected the city of Lubumbashi between July and September 2021 as confirmed by the rate of isolated cases in the health structures of the city of Lubumbashi. The SARS COV2 disease in our environment was observed in men with an average age of more than 50 years carrying out a liberal profession. Hypertension and diabetes, associated or not, were the comorbidities found. On the whole the symptomatology was made up of fever, cough and dyspnoea. The mild form was the most encountered but deaths were linked to the severe form. Although underdiagnosed in our environment, SARS COV2 disease still remains a panacea in developing countries such as ours.

Conflicts of interest

The authors declare no conflict of interest.

Author contributions

All authors participated in the drafting of the manuscript. All authors approve the final version of the manuscript.

References

1 Camara M. epidemiological profile of covid-19 cases in commune 6 of the district of Bamako. 2021

2 Lapierre A, Fontaine G, Tremblay PL, Maheu-Cadotte MA, Desjardins M. Coronavirus disease (COVID-19): portrait of current knowledge. Urgent Care. 2020;1(1):13–9.

3 Zhang J, Dong X, Cao Y, Yuan Y, Yang Y, Yan Y, et al.Clinical characteristics of 140 patients infected with SARS-CoV-2 in Wuhan, China. allergy. 2020;75(7):1730–41.

4 Kitoko HT, Ngoy M, Tambwe AM. COVID 19 in the DRC: summary of the response-Incidence-healing and deaths in the DRC. Rev Afr Public Health Medicine. 2021;4(1):59–74.

5 Tshienda FT, Tshikwela ML, Risasi J-RM, Situakibanza HNT, Salem R, Ndjock PSM, et al. CT lesions in patients hospitalized with COVID-19 pneumonia during the first wave of the SARS-CoV-2 pandemic at the University Clinics of Kinshasa (DRC). Pan Afr Med J. 2021 Aug; 39:230.

6 WHO. Cleaning and disinfection of environmental surfaces in the context of COVID-19: interim guidance, 15 May 2020. World Health Organization; 2020.

7 Bouchareb A, Ayed A, Rahoui K, Berroudja S, Benyekhlef F, Besbes F, et al. Impact of risk factors and comorbidities on the management of patients hospitalized for COVID-19 in a pulmonology department: about 240 cases. Rev Mal Respir Actual. 2022;14(1):120.

8 Daoui A. Epidemiological, clinical and biological profile of COVID-19 patients hospitalized at CHR Hassan II in Agadir. 2021

9 Donamou J, Bangoura A, Camara LM, Camara D, Traoré DA, Abékan RJ-M, et al. Epidemiological and clinical characteristics of COVID-19 patients admitted to intensive care at Donka Hospital in Conakry, Guinea: descriptive study of the first 140 hospitalized cases. Anesth Resuscitation. 2021;7(2):102–9.

10 Nafti K, Zerrouk H. Epidemiological study and assessment of risk factors of COVID 19 in the Wilaya of El-Oued. 2021

11 Donamou J, Bangoura A, Camara LM, Camara D, Traoré DA, Abékan RJ-M, et al. Epidemiological and clinical characteristics of COVID-19 patients admitted to intensive care at Donka Hospital in Conakry, Guinea: descriptive study of the first 140 hospitalized cases. Anesth Resuscitation. 2021; 7(2):102–9.

12 Bepouka BI, Mandina M, Makulo JR, Longokolo M, Odio O, Mayasi N, et al. Predictors of mortality in COVID-19 patients at Kinshasa University Hospital, Democratic Republic of the Congo, from March to June 2020. Pan Afr Med J. 2020 Oct; 37: 105.

13 Bouchareb A, Ayed A, Rahoui K, Berroudja S, Benyekhlef F, Besbes F, et al. Impact of risk factors and comorbidities on the management of patients hospitalized for COVID-19 in a pulmonology department: about 240 cases. Rev Mal Respir Actual. 2022; 14(1):120.

Access this Article in Online	
	Website: www.ijarbs.com
Quick Response Code	Subject: Medical Sciences
DOI:10.22192/ijarbs.2022.09.06.013	

How to cite this article:
Kisoka Kimbungu Thierry, Kakoma Placide, Yumba Georges, Tshiami Eugenie, Mulongo Onesime, Tamubango Kitoko hermann, Kisaka Banza Gaetan, Assumani N'simbo, Emmanuel Muyumba. (2022 Epidemiological and clinical profile of patients with Covid-19 in the city of Lubumbashi. Int. J. Adv. Res. Biol. Sci. 9(6): 121-127.
DOI: http://dx.doi.org/10.22192/ijarbs.2022.09.06.013