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Original Research Article

How Does COVID-19 Affect the Behavior of Sickle Cell Patients in Gabon?

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Abstract: Life evolves, and habits change as situations change, such as those experienced in 2019, when the entire community was taken by surprise by the appearance of an unknown virus SARS-CoV-2. Faced with this unknown, health policymakers put in place regulations to protect populations in each of the countries affected. As a result, the habits of people living with a chronic disease such as sickle-cell anaemia had to be changed. However, it is important to understand how the COVID-19 pandemic contributed to the change in the way Gabonese people living with sickle-cell anaemia used hospital facilities for their regular medical check-ups. We therefore carried out a field survey involving a questionnaire sent to the heads of households in the four administrative districts of the commune of Franceville. The main information obtained from these questionnaires is as follows. Most sickle-cell subjects (64.40%) had no difficulty in accessing healthcare services during the Pandemic. Only 11.10% had difficulties, and the remaining 24.50% refrained from going to hospital. When it comes to accepting the vaccination against the SARS-CoV-2 virus, the response was hundred percent negative. In general, most of this segment of the population had changed their habits on hospital medical consultations, which have been transformed into telephone consultations, videoconferencing, or self-medication.

Keywords: Sickle Cell Disease, Covid-19, Gabon, Habit, Medical Management.

INTRODUTION

Gabon, a central African country crossed from east to west by the equator, with a surface area of 666,667km2, is almost 80 % rainforest. Due to its hot, humid climate, it has already been subjected to several health problems, which it has been able to overcome, and yet the COVID-19 (Coronavirus disease, 2019) pandemic caused by the SARS-CoV-2 virus (Severe Acute Respiratory Syndrome Coronavirus 2) in 2019 has put all the countries of the world in a situation of questioning as to the type of response and behaviour to adopt in the face of this unknown. On March 11th, 2020, the World Health Organization declared COVID-19 a pandemic. In this context, the precautionary principle was applied to the maximum, leading to the confinement of populations, as was the case in Gabon. The Gabonese population is naturally vulnerable, living with a chronic disease such as sickle-cell anaemia. To understand the risks and impact of covid-19 on to the sickle-cell populations, several studies have been carried out around the world, enabling online data to be set up. A link to the registry with case report form (https://covidsicklecell.org). The registry helped to recognize patients with SCD as a population at risk of severe COVID-19 illness and to identify comorbidities that put them at higher risk (Mucalo *et al.*, 2020). In analysis that included 750 reported cases authors found that children with prior acute care visits for pain, SCD related heart/lung comorbidities or those with SCD related renal comorbidities are at higher risk of serious COVID-19 illness. Children with a history of frequent pain and heart and lung comorbidities are also more likely to require hospitalization due to COVID-19. They also found that adults with a history of frequent pain are at higher risk of both hospitalization and developing serious COVID-19 illness. Genotype and use of hydroxyurea did not change outcomes

(Mucalo *et al.*, 2020). When we look at electronic data on comorbidities and hospitalizations, we saw that hospitalization for COVID-19 cases continued to be significantly higher among individuals with SCD compared to those who do not have SCD. This shows that the sickle-cell populations were more vulnerable of developing comorbidities, and that it is important to understand the risk factors in this pandemic context for better management of sickle-cell patients.

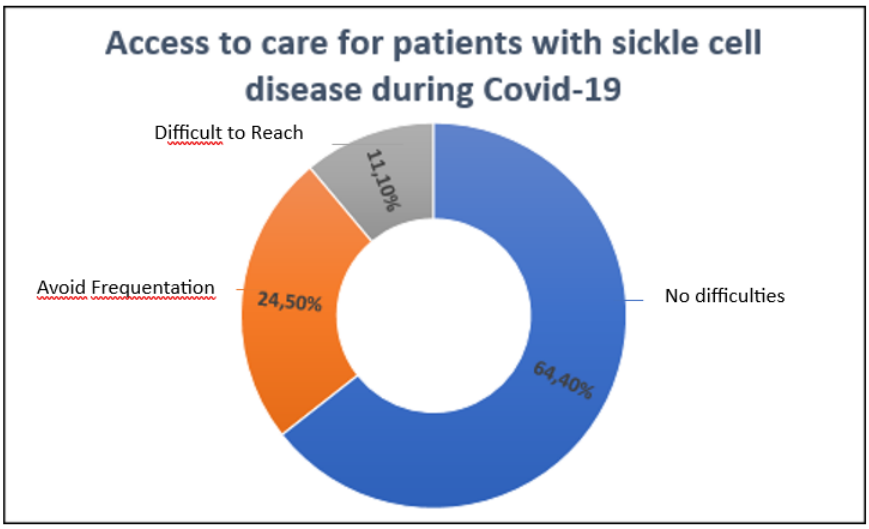
Prior evidence shows that individuals with SCD were at a much higher risk of hospitalization as compared to the general population (Singh A, Brandow AM, 2022). However, the observation of adults with SCD having more severe disease and hospitalization compared to children with SCD is like that of general population. Like all countries, the Gabonese authorities had taken all necessary measures to ensure the care of Covid. The continuous genomics surveillance since the beginning of the COVID-19 pandemic, covering the first three waves of COVID-19 that occurred in Gabon. Data collected clearly showed that Gabon experienced three major waves of COVID-19 before December 2021, like the entire African continent(Ramanathan *et al.*, 2020). In Gabon, a study carried out in 2021 reported that 3.7% of patients with COVID-19 had severe forms, 33.7% had moderate forms, and 62.6% had simple forms (Mangouka *et al.*, 2022). Sickle cell disease (SCD), the most common inherited haematological disorder with a global birth prevalence of 1–5 per 10,000 affects subjects of African origin. The condition is associated with early mortality although improved healthcare has raised the life expectancy of patients with SCD to around 50 years (Kolanska *et al.*, 2020). In Gabon, various awareness programs have been put in place (television, radio, social networks, and internet) by the health authorities and measures including a ban on grouping, curfews and mask-wearing have been put in place to prevent the spread of the disease (Roméo Karl, Imboumy-Limoukou *et al.*, 2022). The aim of this study is to understand the change in behaviors of Gabonese sickle cell patients towards hospital settings, in terms of their regular medical follow-ups during the period of the COVID-19 pandemic.

EXPERIMENTAL SECTION

As part of a study to identify families with sickle cell children in the commune of Franceville, members of the NGO SCDOGa carried out a field survey from December 2021 to June 2022, at the height of the Covid-19 pandemic. All households in the 4 districts were included in the survey. In addition to questions on socioeconomic status and access to universal health care in Gabon, the heads of households were also asked to answer questions on their attitudes to hospital facilities in the context of medical follow-up for family members with or without sickle cell disease. We analyzed the data with R software (version 4.2.1) and its environment R Studio (version 1.1.445). The qualitative data were described in percentages and the quantitative data in means and standard deviation. For the bi-variate analysis (two by two) of the variables, the means were compared with the student test; the qualitative variables with the chi-2 and Fisher test. The accepted significance level was α=0.05.

RESULTS AND DISCUSSION

The population was very receptive to this survey, and a total of 2777 households agreed to take part. The various screening tests carried out by these families enabled us to identify 45 (1.62%) households in which there were sickle-cell-affected children (48 children in total). Most sickle-cell subjects (64.40%) had no difficulty in accessing healthcare during the Pandemic. Only 11.10% met difficulties, and the remaining 24.50% refrained from going to hospital. When it came to acceptance of vaccination against the SARS-CoV-2 virus, the answer was a hundred percent negative.



For abstainers, the health profile of sickle-cell patients is fragile, and the risk of developing nosocomial infections in our hospitals is not zero. So, faced with an unknown virus that was fatal when it was first discovered, it was preferable

for them not to expose themselves to the risk of infection. As for the people who had difficulties, this could be analyzed from several angles, notably by considering the exact period of the covid-19 crisis during which they went for consultation; was it when the pandemic was in full swing? At that time, only the most urgent cases were taken into consideration, as the nursing staff were keen to reduce the number of cases of contamination (in Gabon as elsewhere). In fact, during the Covid period, all the attention of medical staff was focused on the fight against Covid, and several doctors and nursing staff were requisitioned for the various canters set up to combat the pandemic. Priority was given to treating patients with Covid symptoms. Patients suffering from other pathologies, such as sickle-cell anaemia, had difficulty accessing care, and when they presented symptoms like those of Covid or were detected as Covid-positive, they were treated as Covid-positive cases, neglecting the fact that they were sickle-cell patients in the first place. There is therefore a feeling of fear which is not expressed openly but which characterizes by a change of behaviors with hospitals. Under normal conditions, appointments with their GP are estimated at one every two months or once every three months.

There has been a change in this schedule, which during the covid-19 period consisted of arriving at the hospital only in the event of an extreme sickle-cell emergency. For parents, it is out of the question to endanger the life of their children cause of a medical visit routine. They therefore preferred to use old medical prescriptions, self-medication, or grandmother's recipes to relieve sickle-cell symptoms. A study carried out in Gabon showed that 91.9% of the respondents believe that COVID-19 threatens life and may be the reason of death for 90.7% of those surveyed (Roméo Karl, Imboumy-Limoukou *et al.*, 2022). In Gabon people had confidence in vaccines but this result contrasts with vaccine belief 87 because only 20.9% of respondent think that vaccination can't protect them. This contradiction illustrates the ambiguity around the COVID-19 vaccine. Given this ambiguity in the general population, it is easy to understand the reluctance of people living with sickle cell disease to be vaccinated. Advertising campaigns, information from doctors, messages from health authorities, access to the internet and all the information on social media, although edifying, were not enough to convince parents and patients to be vaccinated against COVID-19.

CONCLUSION

The aim of this study was to analyse the new habits of people living with sickle-cell anaemia on hospital structures during the covid-19 pandemic. In general, most of this segment of the population had changed their habits on hospital medical consultations, which have been transformed into telephone consultations, video conferencing, or self-medication. This would help amend future gabs and give a better understanding of how people reacts to situations like such especially the SCD community. And also create room for improvement and consideration for the community.

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