HIV diagnosis in Brazil: the impact of the COVID-19 pandemic

Diagnóstico do HIV no Brasil: o impacto da pandemia de COVID-19

Nelson Pereira Marques[1], Nádia Carolina Teixeira Marques[2], Daniella Reis Barbosa Martelli[3], Edson Gomes de Lucena[4], Eduardo Araújo de Oliveira[5,6], Hercílio Martelli Júnior[2,3]

Dear Editor,

New cases of COVID-19 disease continue to increase in Brazil, with about 22 million cases and 617thousand deaths reported by January 2022[1]. The vaccination started in the country on January17, 2021, with 161 millionfirst doses given to date, representing about 75% of Brazilian population. The complete immunization was carried out in about 144 million people (67% of the Brazilian citizens). The booster dose of the coronavirus (COVID-19) vaccine was applied to 26 million people (12% of the Brazilian population).In total, 331.659.048vaccine doses were administeredall over the country, however the end of the pandemic period cannot yet be predicted due to the uncertainties caused by the Omicron variant of COVID-19[2].

In the light of the current situation, a series of diseases has been neglected and as a result it has been presenting changes in its epidemiological profiles[3-5].A recent studyhas showed a dramatic drop in the number of oncological assistances in the pandemic period, impairing patient care[3]. In contrast, the diagnosis of other diseases, such as herpes zoster and systemic lupus erythematosus,has had a significant increase during the same period[4,5]. Both scenarios possibly occurred by the limitation of patient monitoring in public health services[3-5].

The dissemination of human immunodeficiency virus (HIV) still affects a great number of people around the world. Since this epidemic began, over 75.7 million people have been infected with HIV and 34.7 million people have died from AIDS-related illnesses[6]. Studies of Daniels[7] and Pereira[8] showed that the health care of patients with HIV was not threatened or interrupted in Brazil during the COVID-19 pandemic, because of improvements in the National HIV program, including the creation of the Department of Chronic Diseases and Sexually Transmitted Infections, and the increased human and financial resources over the past two years[7,8]. On the other hand, the Joint United Nations Programme on HIV/AIDS (UNAIDS) revealed the potential impacts of the COVID-19 pandemic on the supply of generic antiretroviral drugs to treat HIV in low- and middle-income countries around the world[6]. Furthermore, the lockdowns and border closures imposed to stop COVID-19 have affected the manufacturing and distribution of medicines, leading to increased costs and supply issues. The final cost of antiretroviral drugs exported from India is expected to be 10 to 25% higher than normal prices[6]. Likewise, this moment has impaired funding of health care programs in othercountries with high HIV incidence[9].

In order to investigate the current situation of AIDS in Brazil, this study evaluated the number of new HIV diagnosis from January 2016 to December 2020 in all Brazilian Regions (North, Northeast, Southeast, South and Midwest), comparing the pre-pandemic to the pandemic period. Between 2016 and 2019, the monthly average was 3,193 cases diagnosed in Brazil, whereas in 2020 this number dropped to 1,980 new diagnosed cases, a fall of 38% per month. The Midwest was the least affected Region (-28.2%), while the Northeast was the most affected (-41.3%). These numbers represent a drop of 1,213 HIV diagnosis monthly throughout Brazil during the pandemic period, corresponding to about 14,556 undiagnosed HIV cases monthly (Table 1). Table 2 shows the comparison of the incidence rate adjusted per million population for the five geographic Regions of Brazil and throughout the country. There was a consistent and significant decrease in the incidence rate all over Brazil.

In response to the increase in the number of COVID-19 cases, non-urgent appointments and hospital admissions have been temporarily discouraged or postponed in Health services, changing healthcare priorities[10]. The fear of SARS-CoV-2 infection may be chasing patients away, causing a decrease in the diagnosis of other diseases, as demonstrated in this study.

Since March 2020, the practice of telemedicine and HIV self-tests have been adopted by Brazilian public health services to minimize

Table 1 – Difference between the mean number of HIV/AIDS diagnoses performed per month in Brazil from 2016-2019 compared to 2020.

Brazilian Regions	2016-2019 (n)	2020 (n)	Difference n (%)
North	377	235	-142 (-37.7%)
Northeast	753	442	-311 (-41.3%)
Southeast	1,221	760	-461 (-37.8%)
South	601	367	-234 (-38.9%)
Midwest	241	173	-68 (-28.2%)
Total	3,193	1,980	-1,213 (-38%)

[1]Department of Oral Diagnosis, Universidade Estadual de Campinas – Piracicaba (SP), Brazil.
[2]Center for Rehabilitation of Craniofacial Anomalies, Universidade José do Rosário Vellano – Alfenas (MG), Brazil.
[3]Primary Care, Health Science Postgraduate Program, Universidade Estadual de Montes Claros – Montes Claros (MG), Brazil.
[4]Clinical and Social Dentistry Department, Universidade Federal da Paraiba – João Pessoa (PA), Brazil.
[5]Department of Pediatrics, Faculty of Medicine, Universidade Federal de Minas Gerais – Belo Horizonte (MG), Brazil.
[6]University of California – San Diego (CA), USA.

Table 2 – Monthlyincident casesof HIV/AIDS per million population in Brazilian macroregions according to the periods 2016-2019 vs. 2020.

Brazilian Regions	2016-2019 Incidence rate (95%CI)	2020 Incidence rate (95%CI)	Incidence ratio (95%CI)	p
North	21.3 (19.2–25.3)	13.3 (11.6–15.0)	0.62 (0.52–0.73)	<0.001
Northeast	13.2 (12.3–14.2)	7.7 (7.0–8.5)	0.58 (0.52–0.66)	<0.001
Southwest	14.1 (13.4–14.9)	8.8 (8.1–9.4)	0.62 (0.57–0.68)	<0.001
South	20.4 (18.8–22.1)	12.5 (11.2–13.8)	0.61 (0.53–0.69)	<0.001
Midwest	15.5 (13.5–17.6)	11.0 (9.5–12.8)	0.71 (0.58–0.87)	<0.001
Total	15.3 14.9–16.1)	9.4 (8.9–9.7)	0.60 (0.57–0.64)	<0.001

interruptions in access to pre-exposure prophylaxis[11]. However, our findings showed that, even with these measures, there was an important reduction in the number of HIV cases diagnosed during the pandemic period. Therefore, a more effective course of action must be urgently planned to prevent further damage arising from the negative impacts of failure in the early HIV infection diagnosis.

Acknowledgements

The authors would like to thank State Research Foundation – FAPEMIG, Minas Gerais, Brazil, the National Council for Scientific and Technological Development – CNPq, Brazil, and the Coordination for the Improvement of Higher Education Personnel, CAPES, Brazil.

REFERENCES

1. Brasil. Ministério da Saúde. Painel de casos de doença pelo coronavírus 2019 (COVID-19) no Brasil; 2021. Available from: https://covid.saude.gov.br/
2. g1. Coronavírus. Vacinas contra o Coronavirus. Vacinação contra a Covid: mais de 143,5 milhões estão totalmente iminizados. Available from: https://g1.globo.com/saude/coronavirus/vacinas/noticia/2022/01/03/vacinacao-contra-a-covid-mais-de-1435-milhoes-estao-totalmente-imunizados.ghtml
3. Marques NP, Silveira DMM, Marques NCT, Martelli DRB, Oliveira EA, Martelli-Júnior H. Cancer diagnosis in Brazil in the COVID-19 era. Semin Oncol. 2021;48(2):156-9. https://doi.org/10.1053/j.seminoncol.2020.12.002
4. Maia CMF, Marques NP, Lucena EHG, Rezende LF, Martelli DRB, Martelli-Júnior H. Increased number of herpes zoster cases in Brazil related to the COVID-19 pandemic. Int J Infect Dis. 2021;104:732-3. https://doi.org/10.1016/j.ijid.2021.02.033
5. Martelli-Júnior H, Marques NP, Marques NCT, Lucena EG, Martelli DRB, Oliveira EA. Correspondence on 'Clinical course of coronavirus disease 2019 (COVID-19) in a series of 17 patients with systemic lupus erythematosus under long-term treatment with hydroxychloroquine'. Ann Rheum Dis. 2021;annrheumdis-2021-220410. https://doi.org/10.1136/annrheumdis-2021-220410
6. UNAIDS. Estatísticas Globais sobre o HIV 2021. Available from: https://unaids.org.br/estatisticas/
7. Daniels JP. COVID-19 threatens HIV care continuity in Brazil. Lancet HIV. 2020;7(12):e804-5. https://doi.org/10.1016/S2352-3018(20)30312-X
8. Pereira GFM. Brazil sustains HIV response during the COVID-19 pandemic. Lancet HIV. 2021;8(2):e65. https://doi.org/10.1016/S2352-3018(21)00003-5
9. Bulstra CA, Reddy CL, Atun R, Bärnighausen T, Hontelez JAC. Impact of the coronavirus disease 2019-related global recession on the financing of the global HIV response. AIDS. 2021;35(7):1143-6. https://doi.org/10.1097/QAD.0000000000002872
10. Silva ACS, Oliveira EA, Martelli Jr H. Coronavirus disease pandemic is a real challenge for Brazil. Front Public Health. 2020;8:268. https://doi.org/10.3389/fpubh.2020.00268
11. Hoagland B, Torres TS, Bezerra DRB, Benedetti M, Pimenta C, Veloso VG, et al. High acceptability of PrEP teleconsultation and HIV self-testing among PrEP users during the COVID-19 pandemic in Brazil. Braz J Infect Dis. 2021;25(1):101037. https://doi.org/10.1016/j.bjid.2020.11.002

Address for correspondence:
NELSON PEREIRA MARQUES
Universidade Estadual de Campinas
Avenida Limeira, 901 – Piracicaba (SP), Brazil
CEP: 13414-018
E-mail: neomarques@hotmail.com

Received on: 01.04.2022
Approved on: 01.08.2022