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Editorial

One year after the arrival of COVID-19 in Latin America: what have we learned in Brazil and other countries?



On February 25, 2020, the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), the etiological agent of the Coronavirus Disease 2019 (COVID-19), was firstly confirmed in Brazil and Latin America, proceeding as an imported case from Italy.^{1,2} After one year of the lately declared pandemic, the COVID-19 has caused deep impacts in Brazil and the region.² Up to March 4, 2021, a total of 21.7 million cases (out of 115 million in the world, 18.8%) (Table 1) have been reported and concentrated in the Latin American and Caribbean region, led by Brazil (10.6 million), as the third country in the world with more cumulated cases, after United States of America (28.8 million), and India (11.2 million).

Contrary to the initially considered by many experts, COVID-19 has caused a significant proportion of deaths. A total 2.5 million deaths have been reported so far (2.17% global fatality rate). In Latin America, this ranges up to 8.93% in countries such as Mexico or Ecuador with 5.0%. In Brazil, 257,361 deaths have been reported for a case fatality rate of 2.42%.

Over the last year, multiple new clinical findings have been detected, including smell and taste disorders, such as ageusia and anosmia, and diarrhea, among many others.³ The COVID-19 became a respiratory infection and a systemic condition that potentially affects many other organ and systems, including cardiovascular, neurological, and renal complications, among others. In at least 2–7% of the patients have required management at intensive care units (ICU), varying by countries, the risk profile of the patients (e.g., age and risk factors), as well as the healthcare system, including the availability of ICU beds, mechanical ventilation as well as critical care specialists, among other factors. COVID-19 varies from asymptomatic infection (in most cases) to severe disease that may lead to fatal outcomes.⁴

As expected, in countries such as Brazil and others in Latin America, the overlapping with other regional importance conditions began to be reported and represent a matter of concern, including HIV, tuberculosis, dengue, and other tropical endemic diseases.^{5,6} And these coinfections still need

to be better understood in terms of their epidemiological and clinical impact.

In terms of laboratory capacity, Brazil and other Latin American countries have built up many skilled molecular biology laboratories that routinely perform the RT-PCR, based on international protocols, to diagnose the SARS-CoV-2. Also, a significant deployment of antigen and antibody tests has been employed in clinical and epidemiological settings, including multiple seroprevalence studies performed in different cities of Brazil and other Latin American countries.

This year, multiple challenges have been faced, including assessing new and specially repurposed drugs for their potential use as prophylaxis or treatment in different clinical conditions. So far, few of them have demonstrated usefulness in COVID-19, such as dexamethasone for patients requiring oxygen, including those on mechanical ventilation. On the other hand, chloroquine and ivermectin have not showed significant benefits in COVID-19. Unfortunately, these and other drugs are widely used in the region, despite the advice against by infectious diseases societies for the region, after the evidence assessment of their utility.

Also, in December 2020, many countries detected and observed the threat of the so-called new variants of concern of the SARS-CoV-2 (VOC) that have been associated with the increase in transmission, as reported in the United Kingdom and South Africa with the VOCs 501Y.V1(B.1.1.7) and 501Y.V2(B.1.351), respectively. These new strains are likely to be more transmissible and may also impact the efficacy of COVID-19 vaccines negatively, still to be fully confirmed. Precisely Brazil is one of the countries that in January 2021 reported the VOC P.1(501Y.V3), now spreading to other countries of Latin America, such as Colombia, Suriname, Venezuela, Peru, and Argentina. This emerging situation resulted in new restrictions on air travel to and from these countries.⁷ The VOC P.1 was first reported by Japan from two travelers from Manaus, one of Brazil's most important rainforest city. This shows the difficult found in Latin Ameri-

Table 1 – Cumulative confirmed and probable COVID-19 cases reported by Countries and Territories in Latin America and the Caribbean, modified from the Pan American Health Organization (March 4, 2021).

Subregion	Country/territory	Cases	Deaths	Recovered	CFR%	Subregion	Country/territory	Cases	Deaths	Recovered	CFR%
North America	Mexico	2,097,194	187,187	1,645,312	8.93	Caribbean and Atlantic Ocean Islands	Bermuda	713	12	684	1.68
Central America	Guatemala	175,411	6412	162,398	3.66		Guadeloupe	9968	164	2242	1.65
	Nicaragua	5176	174	4958	3.36		Sint Maarten	2061	27	2007	1.31
	El Salvador	60,491	1878	56,339	3.10		Dominican Republic (the)	240,773	3130	193,433	1.30
	Belize	12,320	314	11,870	2.55		Barbados	3140	36	2552	1.15
	Honduras	171,758	4187	66,903	2.44		Saint Lucia	3779	37	3067	0.98
	Panama	342,019	5871	328,100	1.72		Bonaire	424	4	395	0.94
	Costa Rica	205,514	2820	183,911	1.37		Aruba	7938	74	7695	0.93
	Subregion	972,689	21,656	814,479	2.23		Virgin Islands (US)	2695	25	2539	0.93
South America	Ecuador	289,472	15,921	247,898	5.50		Saint Martin	1554	12	598	0.77
	Bolivia	250,557	11,703	194,370	4.67		Martinique	6746	45	98	0.67
	Peru	1,338,297	46,894	1,244,029	3.50		Grenada	151	1	147	0.66
	Colombia	2,259,599	59,972	2,156,057	2.65		Turks and Caicos	2115	14	1876	0.66
	Chile	835,552	20,704	790,528	2.48		Virgin Islands (UK)	153	1	152	0.65
	Argentina	2,126,531	52,453	1,921,589	2.47		Cuba	52,501	333	47,626	0.63
	Brazil	10,646,926	257,361	9,527,173	2.42		French Guiana	16,627	85	9995	0.51
	Paraguay	161,530	3218	135,373	1.99		Saint Vincent and Grenadines	1645	8	949	0.49
	Uruguay	59,171	617	51,365	1.04		Curacao	4736	22	4651	0.46
	Venezuela	139,934	1353	132,052	0.97		Cayman Islands	447	2	415	0.45
Caribbean and Atlantic Ocean Islands	Subregion	18,107,569	470,196	16,400,434	2.60		Anguilla	18	0	18	0.00
	Montserrat	20	1	11	5.00	Dominica	144	0	130	0.00	
	Antigua and Barbuda	769	18	307	2.34	Falkland Islands	51	0	48	0.00	
	Guyana	8626	197	8024	2.28	Saba	6	0	6	0.00	
	Bahamas	8573	181	7398	2.11	Saint Barthelemy	612	0	94	0.00	
	Puerto Rico	100,765	2048	91,338	2.03	Saint Kitts and Nevis	41	0	40	0.00	
	Haiti	12,536	250	9828	1.99	Saint Pierre and Miquelon	24	0	24	0.00	
	Suriname	8939	173	8426	1.94	Sint Eustatius	20	0	20	0.00	
	Jamaica	24,103	435	13,745	1.80	Subregion	531,130	7474	428,059	1.41	
	Trinidad and Tobago	7717	139	7481	1.80	Total Latin America and the Caribbean	21,708,582	686,513	19,288,284	3.16	

Source: <https://ais.paho.org/phis/viz/COVID19Table.asp>.

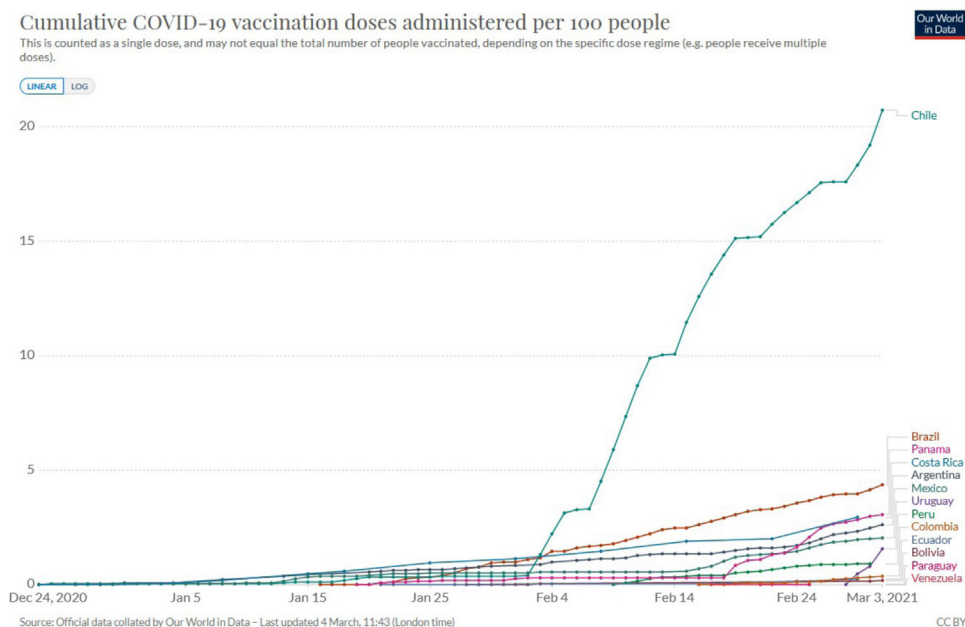


Fig. 1 – Cumulative COVID-19 vaccination doses administered per 100 people in selected countries of Latin America, up to March 3, 2021.

can countries, including Brazil, to genotype and identify VOC that might be spreading through the countries in the continent.

Concurrently, ending 2020/beginning 2021, multiple countries started their vaccination plans using different COVID-19 vaccines, including Brazil and most Latin American territories. In South America, more than 14.2 million doses have been applied, more than 9 million in Brazil (Fig. 1). Vaccines such as Comirnaty BNT162b2 (Pfizer/Biontech), AZD1222 (or Covishield) (AstraZeneca/Oxford), CoronaVac (formerly PiCoVacc) (Sinovac), BBIBP-CorV (Sinopharm), and Sputnik V (Gamaleya Research Institute), among many other arriving, are being used in the region, expecting favorable results, based on phase 3 and target trials already published showing high efficacy and even effectiveness for them. Still, the efficacy and effectiveness of these vaccines need to be assessed carefully under the scenario of the VOCs.⁷

Additionally, and not least important, as previously discussed by our group,² the political scenario has not been friendly for evidence-based decisions. That was mostly the situation in Brazil, Mexico, Argentina, Peru, and Venezuela, among others were not scientifically supported interventions recommended by high-rank stakeholders. Some of them have not broadly followed the recommendations of the World Health Organization (WHO) during the COVID-19 pandemic.² People who refuse to practice COVID-19 preventive measures, such as wearing a mask, hand hygiene, physical distance, remaining in respiratory isolation at home when affected by the disease and not participating in agglomerations are largely responsible for the critical social and effective consequences that affect our countries in Latin America.

It is known that the solution, already experienced by countries such as the USA, United Kingdom and Israel, is the

adoption of preventive measures by the entire population, together with the rapid mass vaccination of the population. Unfortunately, this target seems to be far for most Latin American countries yet.

Even with effective vaccines, multiple measures will need constant assessment and continuing use in Latin America, including selective quarantine for specific territories and periods, isolation, physical distancing, correct use of facial mask, hand washing, controlled rooms capacity, among others. Still, many work and study activities should be carried out virtually.²

Finally, the critical role played by the scientific societies, giving proper support and advice, such as the Brazilian Society of Infectious Diseases (SBI), in addition to the international organizations, such as the Pan-American Health Organization (PAHO) and the WHO, have helped to slow the number of new cases expected, define cases, detect them, and especially with the development of evidence-based clinical guidelines, appropriate clinical management, including diagnosis, treatment, and prevention. Over this first year, many lessons have been learned from different points of view. Very sadly, many colleagues and health professionals have died working in the first line, and some have survived with sequelae. Physicians in Brazil and Latin America are working hard to face the ongoing challenges of the pandemic and hopefully move into the transition to a new “normal” world that may firstly control this emerging coronavirus effectively over the course of the next few months and years, sooner than later. For the moment of proofs correction of this Editorial (March 17, 2021), Brazil reached to 11.6 million cases, becoming the second country in the world with highest cases after USA (29.5 million cases), and facing one of the worse health crises due the collapse of health services.

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Conflict of interest

The authors declare no conflicts of interest.

REFERENCES

1. Rodriguez-Morales AJ, Gallego V, Escalera-Antezana JP, et al. COVID-19 in Latin America: the implications of the first confirmed case in Brazil. *Travel Med Infect Dis.* 2020;35:101613.
2. Cimerman S, Chebabo A, Cunha CAD, Rodriguez-Morales AJ. Deep impact of COVID-19 in the healthcare of Latin America: the case of Brazil. *Braz J Infect Dis.* 2020;24:93–5.
3. Vargas-Gandica J, Winter D, Schnippe R, et al. Ageusia and anosmia, a common sign of COVID-19? A case series from four countries. *J Neurovirol.* 2020;26:785–9.
4. Falavigna M, Colpani V, Stein C, et al. Guidelines for the pharmacological treatment of COVID-19. The task-force/consensus guideline of the Brazilian Association of Intensive Care Medicine, the Brazilian Society of Infectious Diseases and the Brazilian Society of Pulmonology and Tisiology. *Rev Bras Ter Intensiva.* 2020;32:166–96.
5. Cipolat MM, Sprinz E. COVID-19 pneumonia in an HIV-positive woman on antiretroviral therapy and undetectable viral load in Porto Alegre, Brazil. *Braz J Infect Dis.* 2020;24:455–7.
6. Vicente CR, Silva T, Pereira LD, Miranda AE. Impact of concurrent epidemics of dengue, chikungunya, zika, and COVID-19. *Rev Soc Bras Med Trop.* 2021;54:e08372020.
7. Schlagenhauf P, Patel D, Rodriguez-Morales AJ, Gautret P, Grobusch MP, Leder K. Variants, vaccines and vaccination passports: challenges and chances for travel medicine in 2021. *Travel Med Infect Dis.* 2021;40:101996.

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