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CORRESPONDENCE

In search of other respiratory viruses during the COVID-19 pandemic☆

En búsqueda de otros virus respiratorios durante la pandemia COVID-19

Dear Director,

SARS-CoV-2 infection continues to affect public health worldwide. On the American continents, the number of reported cases continues to rise in Brazil, Argentina, Peru, Chile, the USA, and Mexico, among others. In regard to other respiratory viruses, South America has reported little circulation of these entities during the southern hemisphere's winter period (June–August 2020), principally described in press reports.[1]

On the other hand, the Pan American Health Organization (PAHO) highlighted that in the month of July, the expected increase in seasonal flu was not recorded; indeed, rates were even lower than off-season values.[2] A decrease in circulation of other respiratory viruses was also reported in Oceania. In Australia, the annual positivity rate for influenza was just 0.88% as of July 15, 2020.[3]

However, in the USA and Europe, there were reports of flu coexisting with COVID-19 in the population during the winter period of January–March 2020. In Europe, the peak occurred in mid-January, with a 45% positivity rate detected in sentinel centers. There was a predominance of influenza A (H1N1)pdm09 followed by A H3N2 and B/Victoria.[4,5]

Due to this disparate behavior and the scarce information available in Latin America, we evaluated the circulation of respiratory viruses detected in July 2020 in the University of Chile Clinical Hospital (HCUCH, for its initials in Spanish). HCUCH is a public university hospital which mainly cares for adult patients. It is located in the northern zone of Chile's capital city in an area with a greater population density than other municipalities in the country.

The aim of this work was to discover the magnitude and distribution of respiratory viruses among individuals who consulted in the emergency department (ED) during the month of July 2020 and compare it to the same period in 2019.

All tests ordered for the diagnosis of respiratory viruses via PCR in the months of July 2020 and July 2019—the period of the year with the greatest number of respiratory consultations at our institution—were retrospectively analyzed.

The method used for testing for respiratory viruses was a nasopharyngeal swab collected in a universal transport medium. Later, a FilmArray® Respiratory 2.0 expanded molecular panel for 20 respiratory pathogens (BioFire® Diagnostics, Salt Lake City, USA) was used. This machine, which is automated from extraction to amplification, uses nested PCR to improve the technique's sensitivity. The pathogens included in the kit were: adenovirus, coronavirus 229E, coronavirus HKU1, coronavirus OC43, coronavirus NL63, human metapneumovirus, human rhinovirus/enterovirus, influenza A, influenza A/H1, influenza A/H1-2009, influenza A/H3, influenza B, parainfluenza 1, parainfluenza 2, parainfluenza 3, parainfluenza 4, RSV, *Bordetella pertussis, Chlamydophila pneumoniae*, and *Mycoplasma pneumoniae*.

In July 2020, 630 tests for the detection of SARS-CoV-2 were ordered from the ED, including 133 samples in which a differential diagnosis with other respiratory viruses was also conducted using a molecular panel. A 19% positivity rate for SARS-CoV-2 and a 0% positivity rate for other viruses were found, representing a decrease in the circulation of other respiratory viral agents of 100%.

In the month of July 2019, 387 respiratory molecular panel tests were performed: 53% of the samples were positive. The virus with the greatest circulation was respiratory syncytial virus (RSV) (63%), followed by influenza A H1N1 (14%) and influenza B (11%).

Comparing our results to the surveillance of respiratory agents in the country, it was observed that in July 2020, 3,602 samples were analyzed in sentinel centers and there was a positivity rate of 0.97% for non-SARS-CoV-2 samples. This is in contrast to the previous year (July 2019), in which 9,898 samples were analyzed and there was a positivity rate of 47.32%.[6] The 100% decrease in the circulation of other respiratory viruses observed in our results is in line with what has been described in national surveillance (Table 1).

Is maintaining physical distance, hand washing, and use of masks so important to achieving a decrease in other respiratory viral agents? In Chile, a campaign for frequent hand washing has been in place since from March 13, 2020. In-person classes in schools and universities were suspended on March 15, 2020. Air borders were closed on March 18, 2020. Lastly, circulation of the population in public spaces without a mask has been prohibited as of April 17, 2020.

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Table 1 Frequency of non-SARS-CoV-2 respiratory viruses diagnosed via molecular biology in the HCUCH compared to the national frequency in the national respiratory virus reference center, PHI (July 2019 and July 2020).

	HCUCH (July 2019)	HCUCH (July 2020)	PHI laboratory network (July 2019)	PHI laboratory network (July 2020)
Nasopharyngeal swabs	387	133	9,898	3,602
Positive nasopharyngeal swabs	207	0	4,684	35
Adenovirus	2	0	280	11
Parainfluenza	0	0	308	9
Human metapneumovirus	2	0	122	9
RSV	129	0	3,148	4
Influenza A	30	0	494	2
Influenza B	22	0	332	0
Other respiratory viruses	22	0	N/A	N/A

HCUCH: University of Chile Clinical Hospital; PHI: National Public Health Institute of Chile; N/A: information not available; RSV: respiratory syncytial virus.
Source: created by the author with data obtained from the PHI.

In Kentucky (USA), a decrease in positivity rates for seasonal respiratory viruses was observed and was associated with the strict social distancing measures implemented.[7] A brief review of the Taiwanese, Korean, and Japanese populations[8] showed that in 2020, the peak in seasonal flu was lower compared to previous years. This was partly related to stricter physical distancing measures, modifications in greetings, and their cultures' use of masks. In 2018, the impact of travelers and the importation of certain diseases was studied in the USA. Greater disease transmission occurred in travelers who arrived from medium- or low-income countries. These included skin infections, insect bites, and viral respiratory diseases.[9]

Though it is not possible to determine the causes of the low circulation of other respiratory viruses in this report, it would be very interesting to discover more about their behavior in the southern hemisphere during the pandemic period. The differences observed in the basic epidemiology of these respiratory pathogens could generate potential changes in their re-emergence.

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