




# Zika and Novel Coronavirus 2019 (2019-nCoV): Pandemic Viruses Sharing Similarities

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## Dear Editor,

After the arrival of Zika to the Americas in 2014, and its rapid spread across the continent in less than two years, colonizing from the southern cone to North America and conditioning well-established neurological and teratogenic syndromes such as Guillain Barre syndrome and Zika congenital syndrome (characterized by microcephaly, arthrogryposis, and other congenital disorders), which had their origin in regions of Asia and Oceania, where unlike their behavior in these lands, they were conferred benignity and zero mortality. However, when presenting mutations in American lands, Zika had greater virulence and pathogenicity that led to new manifestations not observed in Asian regions such as full neurotropic and teratogenic potential, which has led to a new American lineage (1, 2). Luckily, like any pandemic, Zika has diminished its potential to become a subclinical virus. However, there are still few case reports that have occurred in the same way with dengue and chikungunya.

Regarding respiratory viruses, after the 2009 H1N1 influenza pandemic, other serotypes such as A H3N2 and influenza B virus have been reported, which have caused outbreaks in Asia, but without sufficient pandemic potential to colonize other continents. However, at the end of 2019 and the beginning of 2020, a new coronavirus called the novel coronavirus 2019 (2019-nCoV) emerged and was detected in the Wuhan region of China, conditioning SARS, and severe pneumonia conditions. It was quickly spread to other Asian countries and due to human migration, to the Americas, with a first case detected in the United States followed by other cases detected in Latin America. However, it has not yet been corroborated whether these cases were infected with 2019-nCoV. In these cases, ecological niches are involved, in which various species intervene and act

as reservoirs, ultimately transmitting viruses to humans. However, human intervention in an ecological niche, in addition to generating disturbances, causes the pandemic spread of various enzootic infectious agents (3, 4).

Both viruses stand out for being new in the Americas, coupled with their pathogenic potential and virulence. Being positive single-stranded RNA gives the viruses a higher replication rate, making them potentially pandemic. The viruses also share other characteristics such as the vertical transmission of which Zika was also teratogenic, which is unknown from 2019-nCoV. Influenza H1N1 has no such attribute and only contributes to premature deliveries in infected pregnant women without fetal involvement. Another characteristic of the viruses is the transmission from person to person, without mediating a vector or having sexual contact, which is attributed to the circulating viral load and physical contact in addition to flugge drops dispersed in the environment close to patients. This situation causes a contagion between family members and health workers. Finally, asymptomatic cases with Zika, feverish or afebrile cases, and asymptomatic carriers have been reported. These symptoms have also been recently reported in children with no typical symptoms of infection and with a pneumonia radiological picture, which suggests the asymptomatic condition of the new coronavirus (5-9).

We conclude that both viruses have major similarities that make pandemics comparable (Table 1). Although 2019-nCoV has rapidly spread throughout Asia and countries in Europe and North America, it is still pandemic and probably continues to colonize other countries. Thus, we must be alert for both new cases and routes of transmission and be expectant of new features that may arise, as was the case of Zika that increased the incidence of neurological and teratogenic syndromes upon arrival in the Americas. In the

same way, they probably have to change various cultural situations as a result of the spread of these new viruses that could start in a jungle or an enzootic environment and may become true epidemics of great repercussion for the population through human intervention. Moreover, they must intervene in food hygiene control as well as in importation and human migration. They also need to improve epidemiological surveillance globally (10).

**Table 1.** Comparison Between Zika and 2019-nCoV

	Zika	2019-nCoV
<b>Virology</b>	RNA virus, single-stranded positive	RNA virus, single-stranded positive
	Family Flaviviridae	Family Coronaviridae
	Genus Flavivirus	Genus Betacoronavirus
<b>Arrival time from Asia / Oceania to America</b>	1 year (Epidemic of 2013 in Polynesia, arrival in Chile in 2014)	19 days (first cases in China, December 31, 2019; the first case reported in the United States, January 19, 2020)
<b>Symptoms</b>	Conjunctivitis	Fever
	Skin rash	Cough
	Fever or afebrile	Dyspnoea
	Myoarthralgia	Odynophagia
	Headache	Arthralgia
<b>Tropism</b>	Neurotropic	Pneumotropic
	Teratogenic	Multifaceted tropism
<b>Transmission mechanisms</b>	Vector	Respiratory
	Sexual	Person to person
	Maternal-fetal	Maternofetal
	Blood products	Fecal-oral
	Person to person	
<b>Main complications</b>	Guillain Barre syndrome	Severe acute respiratory syndrome (SARS)
	Congenital Zika Syndrome	
	Myelitis, encephalitis	Severe pneumonia
<b>Treatment</b>	Sofosbuvir	Remdesivir
	Chloroquine	Lopinavir / ritonavir
	Celgosivir	Chloroquine
	Interferon	Umifenovir
	Ribavirin	Oseltamivir
		Peramivir
		Interferon

## Footnotes

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