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EDITORIAL

Nipah virus: what about Brazil in this outbreak?

Virus Nipah: ¿qué pasa con Brasil en este brote?

Vírus Nipah: e o Brasil neste surto?

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Since December 2019, with the advent of the first outbreak of COVID-19 cases in China, the world has been challenged to implement the best strategies and actions to combat, monitor, prevent, mitigate, and treat populations. It was a race against time. And despite technological advances and innovations in science, exorbitant numbers of infected/ill people and the significant increase in deaths, brought situations of fragility and fear about the unknown to people's mental health. Humanity has witnessed countless epidemics and pandemics throughout its history, events like these are understood as something extremely challenging, and which undoubtedly are in line with complex concepts and contexts that subsidize communication instabilities and, sometimes, collective panic. In parallel, from a unique health perspective, the impacts of human activity on the environment, opportunely lead to promoting and potentially dangerous mechanisms for the emergence of diseases with pandemic potential. In this tension of nature, human beings, and animal life meet, which are mutually affected. It is believed that mammals and birds host around 1.7 million unknown viruses, and of this total, around 540,000 - 850,000 could infect humans. Within this perspective, recent cases of Nipah virus infection in India were reported in newspapers and social media around the world, evoking a resurgent primitive demand for fear among people about the potential of a new global threat[1,2].

The Nipah virus (NiV) is a zoonotic, single-stranded RNA, enveloped virus, belonging to the Paramyxoviridae family and Henipavirus genus. It was first identified in Sungai Nipah, a village south of Kuala Lumpur, Malaysia, in March 1999. In this outbreak, more than 250 cases of febrile encephalitis, a classic picture of the disease, were identified. The second outbreak occurred in a geographically non-contiguous location, in the district of Meherpur, Bangladesh, and the city of Siliguri, in Bengal, India, in 2001. The Indo-Bangladesh outbreaks were significantly different from the previous outbreak in Malaysia in terms of modes of transmission, clinical features, and case fatality rates. Human-to-human transmission and nosocomial infections (airborne and/or fomites) were a prominent feature of this outbreak. Furthermore, secondary attack rates were higher, and the disease was more severe and rapidly progressive compared to the outbreak in Malaysia. Since then, there has been an outbreak in Bangladesh almost every year and a total of 17 outbreaks were reported by 2015. There was another small outbreak in 2007 in the Nadia district of West Bengal, India, and again in the Philippines in March to May 2014; Both horses and humans have been affected, with fruit bats being the possible source of infection[1-3].

NiV is relatively stable and can survive for up to three days in some fruit or fruit juices at local ambient temperatures. It can remain infectious for at least seven days in date palm sap kept at 22°C. The virus has a half-life of 18 hours in the urine of fruit bats and can remain viable at 70°C for one hour. However, it can be eliminated by soaps, detergents, and sodium hypochlorite (10,000 ppm), as well as being completely inactivated by heating at 100°C for 15 minutes. Due to its high pathogenicity, capacity for transmission through direct and indirect contact, and lack of prophylaxis and specific treatment, NiV is classified as a risk class 4 biological agent. In this sense, the handling of samples for diagnosis and research must be carried out in an environment of maximum biological containment (biosafety level 4 - NB4)[3].

In Brazil we still do not have a laboratory structure with this level of biological containment, representing, therefore, a great challenge in facing a threat caused by a pathogen with maximum biological containment and with pandemic potential. The question to be answered is whether NiV represents a threat of this magnitude[3].

In this case, the response to a public health emergency by Niv would be limited to molecular diagnosis, with viral inactivation being carried out in a high biological containment environment (Biosafety Level 3 - NB3). Within this perspective, the Evandro Chagas Institute, of the Health and Environmental Surveillance Secretariat of the Ministry of Health, and the Pan American Health Organization Collaborating Center for Arboviruses and Zoonotic Viral Emergencies, has the structural capacity and experience in combating highly pathogenic agents. In the case of care for people affected by the virus, the Evandro Chagas National Institute of Infectious Diseases of the Oswaldo Cruz Foundation also stands out as a reference in specialized assistance in infectious diseases, offering biocontained beds, with unidirectional air flow and negative pressure[3,4].

On the other hand, we also understand that in the case of a pandemic caused by a risk class 4 virus with high transmissibility and great impact on the population, the preparation of health professionals to face this and the biosafety and infection control protocols must exceed the reference centers and be incorporated into the daily practice of health services in all locations and levels of care. Despite rumors and alarming news in major newspapers around the world about a potential pandemic event, the current outbreak scenario in India does not show evidence that corroborates this assertion, nor is there any epidemiological evidence that could lead to a darker scenario. As we mentioned throughout the text above, intermittent outbreaks have been occurring in the countries mentioned over the last 20 years without having internal repercussions in other locations in those countries. However, we also cannot rule out the unpredictable occurrence of a pandemic event. In this line of reasoning, it should be noted that Brazil has a very active and structured surveillance system, with a constant focus on advanced practices and process improvement. An example of this is the training program in epidemiology applied to the services of the single health system - EpiSUS advanced level. It is also important to highlight that international efforts have been made under the leadership of the United Nations and its signatory countries, which culminated in the Political Declaration of the High-Level Meeting of the 78th. United Nations General Assembly on Prevention, Preparedness and Response to Pandemics, closed in New York on September 26 of this year, whose content focuses on political-economic commitment and articulation as an essential strategy for maintaining life in the global world[5,6].

The collective participation of Brazilian authorities, universities and health services must occur in an integrated manner to act promptly, implementing preventive measures and adopting contingency plans and easy-to-understand protocols with simple and objective language for responding to outbreaks, to protect the health of people, animals, and the environment and, in doing so, save lives. Prevention, early detection, and coordinated response are crucial to confront NiV and other emerging threats to global health. An interesting strategy was described in a study [1], in which the authors report the experience of 5 countries in participating in the evaluation of the 7-1-7 target, counting in days, which prioritizes detection, notification and timely response to outbreaks. This goal can be used in various types of outbreaks and determines the preparation of a nation for possible infectious events of different types.

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