

Dengue epidemic during the COVID-19 pandemic in the State of Sergipe: a concern for health services and a warning to intensify prevention and control measures

Epidemia de dengue durante a pandemia de COVID-19 no Estado de Sergipe: Uma preocupação para os serviços de saúde e um alerta para intensificar as medidas de prevenção e controle

Epidemia de dengue durante la pandemia de COVID-19 en el Estado de Sergipe: Una preocupación para los servicios de salud y una advertencia para intensificar las medidas de prevención y control

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Abstract

The Pan American Health Organization (PAHO) has guided the importance of maintaining measures and actions to prevent, detect and treat vector-borne diseases during the COVID-19 pandemic, since the combined impact of these diseases can have devastating consequences for the population, above all, vulnerable people such as children, the elderly and those diagnosed with cardiovascular diseases. Thus, this letter to the editor is a reflection to alert the scientific community, professionals, and managers about the impact of dengue epidemics during the COVID-19 pandemic. The state of Sergipe, located in the Northeast of Brazil, has a high level of building infestation by the *Aedes aegypti* mosquito and is endemic for dengue. Other Brazilian states also have the same epidemiological situation. Thus, it is important that control measures be intensified to continue dengue prevention. The situation may be aggravating in the coming years in terms of incidence and morbidity and mortality.

Keywords: Dengue; COVID-19; Control measures.

Resumo

A Organização Pan-Americana da Saúde (OPAS) orientou a importância de manter as medidas e ações para prevenir, detectar e tratar as doenças transmitidas por vetores durante a pandemia de COVID-19, uma vez que o impacto combinado dessas doenças pode promover consequências devastadoras para a população, sobretudo, as vulneráveis como crianças, idosos e as que possuem diagnóstico de doenças cardiovasculares. Desta forma, esta carta ao editor é uma reflexão para alertar a comunidade científica, profissionais e gestores sobre o impacto das epidemias de dengue durante a pandemia de COVID-19. O estado de Sergipe, localizado no Nordeste do Brasil, possui alta infestação predial pelo mosquito *Aedes aegypti* e é endêmico para dengue. Outros estados brasileiros também apresentam a mesma situação epidemiológica. Assim, é importante que as medidas de controle sejam intensificadas para continuar a prevenção para a dengue. Pois, a situação pode ser agravante nos próximos anos em termos de incidência e morbimortalidade.

Palavras-chave: Dengue; COVID-19; Medidas de Controle.

Resumen

La Organización Panamericana de la Salud (OPS) ha orientado la importancia de mantener medidas y acciones para prevenir, detectar y tratar enfermedades transmitidas por vectores durante la pandemia COVID-19, ya que el impacto combinado de estas enfermedades puede tener consecuencias devastadoras para la población, arriba todos, personas vulnerables como niños, ancianos y personas diagnosticadas con enfermedades cardiovasculares. Así, esta carta al

editor es una reflexión para alertar a la comunidad científica, profesionales y gestores sobre el impacto de las epidemias de dengue durante la pandemia de COVID-19. El estado de Sergipe, ubicado en el noreste de Brasil, tiene un alto nivel de infestación de edificios por el mosquito *Aedes aegypti* y es endémico para el dengue. Otros estados brasileños también tienen la misma situación epidemiológica. Por lo tanto, es importante que se intensifiquen las medidas de control para continuar con la prevención del dengue. La situación puede agravarse en los próximos años en términos de incidencia y morbilidad y mortalidad.

Palabras clave: Dengue; COVID-19; Medidas de control.

Dear editor,

Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), currently represents one of the greatest public health challenges worldwide. The initial outbreak occurred in December 2019 in Wuhan, China, and on March 11, 2020, the World Health Organization (WHO) declared COVID-19 a global pandemic (WHO, 2021). Several measures were adopted to combat the disease, including the use of a mask, proper hand washing and social isolation (WHO, 2020).

However, in the midst of the COVID-19 pandemic, dengue cases are increasing significantly in Brazil, alerting health services to the importance of adopting prevention and control measures, representing numerous challenges in view of the coexistence of these two diseases. According to data from the Ministry of Health, until the epidemiological week 21, 778,400 probable cases (incidence rate of 370.4 cases per 100 thousand inhabitants) of dengue were reported in Brazil. In addition, 585 cases of severe dengue and 7,089 cases of dengue were confirmed with alarm signs and 342 deaths (Brasil, 2020).

The state of Sergipe, located in the northeast, is considered endemic for dengue and 63,912 cases were confirmed during the period from 2000 to 2019, with an average incidence rate of 187.2 cases / 100,000 inhabitants. Until epidemiological week 21 of 2020, 379 new cases have been registered (incidence of 16.5 cases per 100 thousand inhabitants).

The increase in dengue cases in the state may be related to the volume of rainfall during the first three months of the year, as well as the possible carelessness of the population in the face of the concern and direction of actions to control with COVID-19, thus reducing the actions reduction of proliferation of *Aedes aegypti*. In addition, the state of Sergipe has high rates of population density and social inequality and an inadequate average rate for the human development index (Lima et al., 2019).

These factors contribute to the establishment of inadequate housing, work and income conditions in different areas, especially, in places that have the best rates of social development, such as the capital Aracaju, and that favor the risk of illness from dengue, as demonstrated in a study conducted in a neighborhood in the municipality of Aracaju, that identified key properties responsible for the maintenance of the infestation by the vector and that are mosquito-generating foci that can spread to neighboring areas (Marteis et al., 2013).

Studies show that dengue may be associated with low socioeconomic status, low income, low education, low literacy (Hagenlocher et al., 2013), lack of knowledge about disease transmission (Soghaier et al., 2015), presence of economically inactive people in the household such as unemployed, students and domestic workers (Hagenlocher et al., 2013), agglomeration in households (Braga et al., 2010), poor housing with sewage and inadequate garbage collection (Costa et al., 2013), household density (Khormi & Kumar, 2011) and type of housing (Braga et al., 2010).

Faced with the problem, we warn about the impact of mobility restriction measures against COVID-19 in areas of high social vulnerability in the state for the proliferation of the vector mosquito and an increase in dengue cases, the difficulty in tracking and diagnosing these infections for proper treatment and the absence of current research showing the relationship of the two diseases. In addition, in Brazil, dengue infections are caused by serotypes DENV-1 and DENV-4. However, the re-

entry of the DENV-2 serotype in 2019 warns of a significant increase in cases and severity of the disease in the year 2020 (Brasil, 2020).

In addition, studies suggest that dengue and COVID-19 infections are difficult to distinguish because they have similar clinical and laboratory characteristics, especially in regions where dengue is endemic (Wiwanitkit, 2020; Yan et al., 2020).

Thus, we recommend that health services intensify the control measures of *Aedes aegypti*, train health professionals to track and differential diagnosis of dengue and COVID-19, develop protocols for referral of cases at the local and state level, and train community health agents, endemics, zoonoses and surveillance agents for field work and population orientation. In addition, it is important that the media services provide adequate information on the clinical management of dengue coexisting with the infection by COVID-19 and guide the population regarding the intensification of control measures for these diseases.

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