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Letter

Aedes Mosquito and Dengue Fever in Iran

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Abstract

Dengue fever, a highly concerning arboviral disease, is primarily spread by Aedes mosquitoes and poses a significant global public health risk. Key vectors, such as Aedes aegypti, Aedes albopictus, and Aedes cinereus, are widely prevalent in tropical and subtropical regions and impact worldwide. These species are also current in Iran, especially in the southern, southeastern, and northern regions. By embracing a comprehensive and interdisciplinary approach, we have the potential to lead advancements in preventing and controlling dengue fever stemming from Aedes mosquito transmission. Sustained research endeavors, pioneering partnerships, and public health education are indispensable in the battle against dengue fever, aiming to alleviate its impact on affected communities worldwide.

Keywords: Dengue fever, Aedes mosquitoes, Critical Care.

Dear Editor,

Dengue fever, a highly concerning arboviral disease, is primarily spread by Aedes mosquitoes and poses a significant global public health risk. Key vectors, such as Aedes aegypti, Aedes albopictus, and Aedes cinereus, are widely prevalent in tropical and subtropical regions and impact worldwide. These species are also current in Iran, especially in the southern, southeastern, and northern regions.

Dengue fever is a complex disease with diverse clinical manifestations and potentially severe illness. Using biomarkers such as platelet count, hematocrit level, liver enzymes, and vascular leakage markers, we can effectively predict and manage severe cases of dengue fever. Understanding the clinical course of dengue fever, which includes the fever, critical, and recovery phases, is crucial for effectively managing and treating this viral disease caused by the Aedes mosquito. Diagnosing dengue fever can be challenging, as it requires differentiation from other febrile illnesses and early identification of severe warning signs. However, one can accurately diagnose and proactively manage the disease with a solid understanding of clinical symptoms, prognostic indicators, and diagnostic methods. Since there are no specific antiviral treatments or vaccines for dengue, providing supportive care and symptomatic treatment is crucial [1-2].

No specific antiviral therapy has been approved for treating dengue fever; however, research is ongoing to develop effective antiviral agents that can directly target the dengue virus. Potential antiviral strategies include targeting viral replication enzymes and inhibiting entry. In addition to antiviral treatments, other potential therapeutic strategies for dengue management are being investigated. These include using monoclonal antibodies that target viral proteins, interferon-based therapies to enhance host immune responses, and developing dengue vaccines. These approaches promise to prevent or reduce the severity of dengue fever in the future. Vaccines targeting the dengue virus have been developed to prevent infection and reduce disease burden and are available for limited use in some countries. These vaccines aim to provide protective

immunity against all four dengue virus serotypes, reducing the risk of severe disease and transmission. Public health interventions, including community-based educational initiatives, play a crucial role in increasing awareness of dengue risk factors, preventive measures, and early detection of symptoms. They empower individuals to take preventive measures to reduce disease transmission, making each person a part of the solution. Integrated approaches that combine vector control with vaccination and public health interventions have shown promising results in reducing the burden of dengue fever [3-4].

Dengue fever management, which includes supportive care, fluid management, and organ dysfunction monitoring, is a crucial part of healthcare. It is the responsibility of healthcare providers to reduce symptoms and prevent complications. Early detection of warning signs and prompt initiation of appropriate treatment is critical in preventing severe dengue and its associated complications. Healthcare providers should also be aware of possible infections or underlying diseases that may complicate the clinical course of dengue fever. Considering the critical role of the Andes mosquito in the transmission of the dengue virus, integrated vector control measures aimed at preventing mosquito bites are necessary. These targeted control measures are focused on reducing Andes mosquito breeding sites and eliminating their breeding sites, using insecticides and biological control methods targeting mosquito larvae or adults, and promoting community participation to reduce environmental and ecological risk factors related to dengue transmission [3-5].

Iran's current climatic and geographical conditions are conducive to the spread of viruses. The disease has already affected several provinces in Iran, with most cases concentrated in the southern and southeastern regions, including Sistan, Baluchistan, and Hormozgan. This urgent situation demands immediate attention. The increase in international travel and urbanization is believed to have contributed to spreading the dengue virus in Iran. However, the role of climate change in this scenario must be considered. Several ecological factors, including the impact of climate change, play a significant role in dengue transmission dynamics in Iran. The presence of suitable places for reproducing Andes mosquitoes, such as water storage containers and discarded items, directly results from changing climate patterns. Therefore, urgent climate action is needed to control the spread of the virus.

By embracing a comprehensive and interdisciplinary approach, we have the potential to lead advancements in preventing and controlling dengue fever stemming from Aedes mosquito transmission. Sustained research endeavors, pioneering partnerships, and public health education are indispensable in the battle against dengue fever, aiming to alleviate its impact on affected communities worldwide.

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Conflict of Interest Disclosures

We declare that there is no conflict of interest.

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