Science Publications

Open Journal of Medical Sciences, 2021, 1, 53-54
www.scipublications.org/journal/index.phpo/ojms
DOI: 10.31586/ojms.2021.162

Letter to the Editor

West Nile Fever amid COVID-19 Crisis

Madeeha Subhan Waleed [1,*], Upasana Agrawal [2], Waleed Sadiq [3], Mahnoor Sukaina [4], Deepak Verma [5], Pawan Kumar Thada [6], Shehroz Shahid [4], Vineeth Amba [7], Radhika Pathalapati [8]

[1] Larkin Community Hospital South Miami Florida, USA
[2] Kasturba Medical College, Manipal, India
[3] Staten Island University Hospital, Staten Island, Newyork, USA
[4] Karachi Medical and Dental College, Pakistan
[5] Janaki Medical College, Nepal
[6] Punjab Medical College, Pakistan
[7] Robert Wood Johnson Rutgers, USA
[8] Lower Bucks Hospital, USA

*Correspondence: madeehas99@gmail.com

How to cite this paper: xxx

Received: xx, 2021
Accepted: xx, 2021
Published: xx, 2021

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Dear Editor,

Isolated first in 1937 from a febrile woman in the West Nile district of Uganda, the West Nile virus is a mosquito-borne flavivirus belonging to the Japanese encephalitis antigenic group. Culex SPS mosquito and wild, captive birds are considered to be the harbor of its natural transmission cycle, while dead-end hosts are believed to be humans and horses. Initially, the dispersal of human West Nile virus(WNV) infection was mainly sporadic but outbreaks involving a significant number of neuroinvasive cases have been reported since mid-90's across the world. First reported in New York in 1999, it spread across the entire country in the following years [1].

The number of human cases has ranged from 3-47 per year. 47/ 359 (13%) neuroinvasive cases have succumbed to the disease. The number of positive mosquito pools also varies from 40-1010 per year. Official reports suggest that the virus has been detected in all five boroughs of New York City(NYC). One hundred eighty-eight positive mosquito pools have been detected in 2021 compared to nine positive pools at the same time in 2020 [2]. Almost 60-80% of the West Nile fever remains asymptomatic. In symptomatic patients, clinical features are indistinguishable from viral syndromes including COVID-19. The resemblance of symptoms has misdirected the treatment of either case. Common acute and self-limited manifestations comprise fever associated with headache, myalgia, malaise, joint pains, rash, diarrhea, and anorexia simulating COVID-19. On the rise of the overwhelming pandemic, there has been reported evidence of West Nile fever misdiagnosed as COVID-19 in concurrent PCR positive patients.[3] Eye pain, rhabdomyolysis, hepatitis, myocarditis, central diabetes insipidus, fetal hemorrhagic fever, myositis are less common complications. Similarly, the neuroinvasive form involves meningitis, encephalitis, flaccid paralysis, convulsions with neurological presentations. Patients may present with persistent symptoms followed by acute infection such as fatigue, balance problems, memory impairment, weakness. Also, a similar pattern of risk factors has been proclaimed. Comorbidities, older age, and immunosuppression increase the severity and mortality.[4] Unlike COVID-19, the West Nile virus spreads through a mosquito bite which can spread rapidly and conjunctively complicate the ongoing pandemic. The COVID-19 situation on the latest 2nd August 2021 in New York surged to 2,216,457 with reported deaths of 54,247 inhabitants in the city. [5] The Delta variant of COVID-19 is affecting the population globally, as it is catastrophically the most transmissible variant among previous variants of COVID-19 with a high infectious rate. On June 12, 2021, 23% of the emerging COVID-19 cases were reported as of the delta variant. [6] Moreover, until

recently 30th July 2021 the upsurge of delta variants posing a concerning issue in NYC. Three times increment in the cases of Delta variant as compared to the previous 21 days. It has become a "dominant strain" in NYC with 72% of all the new cases reported to be delta variants of COVID-19. [7] As most cases of WNV are asymptomatic or have mild symptoms, a significant number of patients tend not to seek medical care. This leads to underreporting of the actual burden of infection in a particular province, with most reported cases representing individuals who suffered a severe form of the disease, such as those with neurological involvement that require hospitalization [8]. With summer through fall being months that note a peak in WNV infections, along with the recent rise in the number of delta variant cases of COVID-19 in New York City, does raise a concern regarding possible overburdening of the healthcare system in the city and the need for implementation of strict public health measures.

The Treatment of West Nile virus infection is usually supportive. The resurgence of the WNV recently propels the need for sustainable, community-based surveillance and mosquito control programs. Identifying the source of the vector mosquitoes, eliminating the breeding sites of vector mosquito populations by application of insecticides will eventually help in getting rid of the disease. Personal protective measures such as wearing long-sleeve shirts, long pants, staying indoors between dawn and dusk and avoiding high-risk areas can help reduce the exposure to the vector as well. Insect repellent should be used efficiently to reduce the risk of acquiring the WNV. No vaccine is available against the WNV in humans, however, in the animal population there have been positive outcomes. Several trials are underway to develop this strategy for humans as well. Also WNV infections can also be transmitted with blood transfusion or organ transplantation, health care individuals should be cautious regarding this and immediately report any such event to the appropriate state or local health department.

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