INFECTIOUS CAUSES OF NEUROLOGICAL DISORDERS IN LATIN AMERICA: ZIKA AND BEYOND

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Disclosure: none

Learning objective:

- To discuss different diseases associated with transmission by mosquitoes (zika and beyond).
- To discuss local epidemiology of zika virus (ZIKV) in the world and Latinamerica
- To discuss clinical manifestation of ZIKV in human
- To know prognosis associated to ZIKV
- To know future therapies to ZIKV (including vaccine)



Zika virus transmission cycle









*Final interpretation of result should be done in conjunction with clinical presentation and epidemiological context †Patient should be asked about prior flavivirus infections and vaccinations (e.g., yellow fever, dengue, tick-borne encephalitis, Japanese encephalitis)

Figure 1. Proposed testing algorithm for suspect Zika virus (ZIKV) or dengue virus (DENV) infection in a symptomatic non-pregnant person

https://iris.who.int/bitstream/handle/10665/359857/WHO-ZIKV-DENV-LAB-2022.1-eng.pdf?sequence=1



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Figure 2. Proposed testing algorithm for suspect Zika virus (ZIKV) or dengue virus (DENV) infection infection in a symptomatic pregnant woman

Key message:

- Zika and beyond is a group of diseases that causes many neurological disorders
- Zika and beyond transmission is preventable with adequate vector control
- Zika vaccination is a promising option to control the disease

Reference:

- WHO: https://iris.who.int/bitstream/handle/10665/359857/WHO-ZIKV-DENV-LAB-2022.1-eng.pdf? <u>sequence=1</u>
- health worldwide. Can J Microbiol. 2020 Feb;66(2):87-98. doi: 10.1139/cjm-2019-0331.
- Aug;23(8):1360-1363. doi: 10.3201/eid2308.161944.
- TORZICH? Interdiscip Toxicol. 2018 Dec;11(4):241-246. doi: 10.2478/intox-2018-0023.
- Dis. 2019 Jul 14;4(3):104. doi: 10.3390/tropicalmed4030104.
- doi: 10.1056/NEJMe1601862.

• Sharma V, Sharma M, Dhull D, Sharma Y, Kaushik S, Kaushik S. Zika virus: an emerging challenge to public

• Brooks T, Roy-Burman A, Tuholske C, Busch MP, Bakkour S, Stone M, Linnen JM, Gao K, Coleman J, Bloch EM. Real-Time Evolution of Zika Virus Disease Outbreak, Roatán, Honduras. Emerg Infect Dis. 2017

 Christian KM, Song H, Ming GL. Pathophysiology and Mechanisms of Zika Virus Infection in the Nervous System. Annu Rev Neurosci. 2019 Jul 8;42:249-269. doi: 10.1146/annurev-neuro-080317-062231.

• Tahotná A, Brucknerová J, Brucknerová I. Zika virus infection from a newborn point of view. TORCH or

• Maslow JN. Zika Vaccine Development-Current Progress and Challenges for the Future. Trop Med Infect

• Rubin EJ, Greene MF, Baden LR. Zika Virus and Microcephaly. N Engl J Med. 2016 Mar 10;374(10):984-5.