



Zika Virus

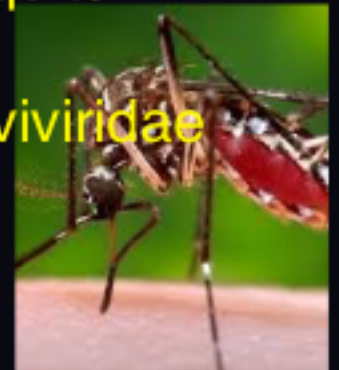


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What is Zika Virus?

- Zika is a virus primarily spread by an infected mosquito
- The virus is a single-stranded RNA virus of the Flaviviridae family, genus Flavivirus
- Aedes species mosquito (Ae.)
- *Ae. aegypti* and *Ae. albopictus* (Asian tiger mosquito)
- They are primarily day time biters but may also bite at night



Brief History of Zika

- First identified in monkeys in Uganda in 1947
- First human case was detected in Nigeria in 1954
- Following the time frame there has been outbreaks in Africa, Southeast Asia and the Pacific Islands
- February 1st, 2016 the World Health Organization (WHO) declared that the Zika virus outbreak constituted a Public Health Emergency International Concern



Zika Facts

- The Zika virus is primarily found in a tropical climate
- Typically not found at elevations greater than 6500 feet
- Infections at this time in the US are mostly from people traveling out of the country it is expected to spread to warm parts of the US



Transmission: Human to Human

- Pregnant mom to her fetus
- infected person can transmit virus through unprotected sex
- Possibly through blood transfusion



Differential Diagnosis

- The same mosquito that transmits Zika also transmits the below viruses



1. Dengue Virus
2. Chikungunya



What are the Symptoms: Most Common

- Joint Pain: affecting large and small joints
- Rash: may start out on a small area and then travel to completely cover the body. The rash typically does not itch but burns
- Fever: typically low grade
- Red eyes/ conjunctivitis : the eyes looks bloodshot
- Muscle pain
- Headache
- Nausea and vomiting



Symptoms

- Most people will have mild symptoms
- If you think you have the Zika symptoms the CDC is recommended you see your healthcare provider



Degrees of Symptoms

- You may not know you are infected
- May present with mild symptoms
- Rarely people will die from a Zika infection

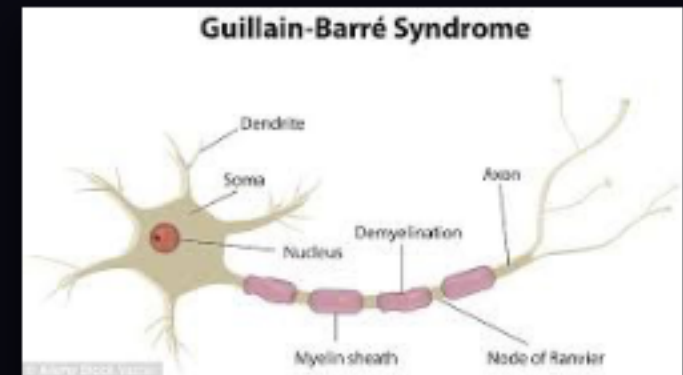
Sequelae of Zika Virus

- The biggest and most serious threat is to pregnant women
- There is also strong association with Guillain-Barre syndrome (GBS). It is estimated that 24/100,000 people infected with Zika will contract GBS



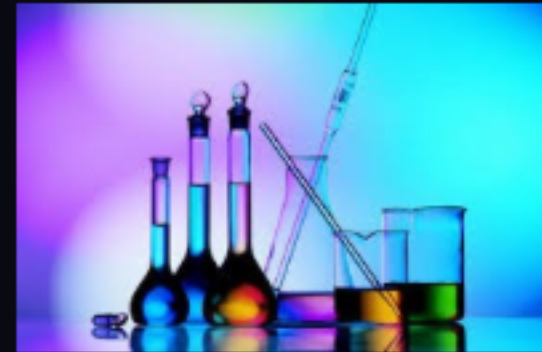
Guillain-Barre Syndrome (GBS)

- GBS is a disorder that causes temporary/ or permanent paralysis or muscles weakness
- The weakness could last a few weeks or months
- Most people that have GBS with Zika fully recover from the neurological symptoms
- Lancet reports that 24 people out of a 100,000 infected with Zika will get GBS



How is it Diagnosed?

- Special Blood or Urine test
- Specimens are sent to the CDC or a speciality lab equip to run the highly specialized tests
- May take 21-30 days to get the results



Diagnosis of Zika

- Person's travel history
- Blood or urine test
- Physical Signs and Symptoms: rash, joint pain, weakness, headache, low grade fever nausea and vomiting
- May only have a few of the above signs and symptoms or all of them

When is Testing Appropriate?

- Less than 14 days after the onset of symptoms testing is recommended
- Blood/serum is best early on where urine can detect later in the disease process



Zika Test Results

- CDC test results may take about 21-30 days
- Results from the CDC are sent to the state or local health department
- The state or local health department then reports the results to the ordering doctor



Protection from Zika

- Unlike malaria carrying mosquitos- the Zika carrying mosquito is mostly active during the day and so night time mosquito nets are less ineffective
- Zika carrying mosquitos live both indoors and outdoors
- Get rid of free standing water: the mosquitos lay their eggs in these locations



How to Protect Yourself From Zika

- Avoid getting bit from mosquitos
- Wear long sleeve shirts and pants
- Treat your clothing with permethrin
- Use Environmental Protection Agency registered insect repellents. If using sunscreen too: apply sunscreen first than mosquito repellent on top
- Insect repellent recommendations from the CDC: products that contain DEET, picaridin, oil of lemon eucalyptus and para-methane-diol. Always check instructions for use and age of use . Many of these products are not recommended for small children and babies
- Mosquito netting
- Prevent sexual transmission with the use of condoms

Where Not to Travel

- The best way to determine places that are high risk for Zika virus will be identified on the CDC.gov website
- The locations that are high risk are rapidly changing and will be updated by the CDC website
- If pregnant travel to high risk places is NOT recommended



Can Zika Be Spread from One Person to Another?

- Zika can be spread from person to person through sex
- If a mosquito bites a person infected with Zika and then bites another person they may become infected



What are the Tests Perform to Diagnosis Zika?

- Zika virus real time reverse transcriptase-polymerase chain reaction (rRT-PCR)
- Serum testing by antibody detection
- Anti-Zika immunoglobulin (IgM) detection methods



Testing Specimens

- Blood/ serum: Zika is usually detected during the earlier phase of the infection
- Urine: Zika virus RNA has been detected in urine for a longer period of time than in serum
- CSF
- Amniotic fluid



Treatment of the Zika Virus

- There is no specific medicine or vaccine for the virus
- Tylenol is recommended
- Rest
- Drink plenty of fluids
- Do NOT use aspirin or other NSAIDS such as Motrin or Aleve until the diagnosis of Dengue fever has been ruled out due to the risk of hemorrhage



Pregnant Women

- The CDC recommends that pregnant women NOT travel to places known to be infected with Zika because of the risk of a severe birth defect called microcephaly
- Zika will cause severe birth defects to the fetus
- Microcephaly: when the baby is born with incomplete brain development, hearing deficits and impaired growth



Microcephaly

- During pregnancy the babies brain is growing which in turn causes the head to grow
- In a fetus with microcephaly the brain is small and underdeveloped so the head does grow to the normal size
- Zika Virus effects the growth of the developing fetus's brain



Microcephaly: Results

- The permanent problems can range from mild, severe to life-threatening
- Mental retardation
- Seizures
- Developmental delays: speech issues, delays in sitting, standing and walking
- Movement and balance problems
- Difficulty swallowing
- Hearing loss
- Vision impairment



Microcephaly: Diagnosis

- Diagnosis is made during late second or early third trimester via ultrasound
- After birth: circumference of the babies head is measured
- If the diameter is less than two standard deviations of the norm the diagnosis is made
- Measurements are made after the baby is 24 hours old
- Or... if the head circumference is less than the 3rd percentile



If Pregnant and Infected with Zika Will My Baby have Microcephaly?

- Studies report that some but not all babies infected with Zika will be born with microcephaly
- Percentages/statistics are currently not known
- Ultrasound after 20 weeks of pregnancy can help with the diagnosis of microcephaly



Infected with Zika and Pregnant : Unknown Facts

- *Unknown are the stats if the Zika virus will infect the fetus*
- *Unknown when in pregnancy the virus gets past on to the fetus*
- *Unknown if the baby will have birth defects*
- *Unknown if sexual transmission of the virus will have different birth defects than mosquito transmission*



Trying to get Preggers but Infected with Zika

- Women that are infected with Zika virus according to the CDC should wait at least 8 weeks after symptoms of Zika virus are detected to get pregnant
- If the man is infected they should wait 6 months before getting their partner pregnant

Unknown Zika Facts

- Unknown what the percentage of transmission is from an infected man to a women via intercourse



How Long do the Symptoms Last?

- Symptoms occur typically for 7-14 days



Summary

- Avoid traveling to areas of the world that are infected with Zika
- If in an area with Zika protect yourself from getting bit by mosquitos
- If symptoms occur: seek medical advice. Labs may be obtained and sent to the CDC
- May use Tylenol, drink lots of water and prevent infecting others

References

- Center of Disease Control and Prevention of Zika virus symptoms
 - www.cdc.gov
- World Health Organization on the symptoms of Zika
 - www.who.com
- European Centre for Disease Control and Prevention on Zika

