

Why We Need West Nile Virus Testing

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Sarah Gregory] I'm talking today with Dr. Rodrigo Hasbun about his study on West Nile virus testing in meningitis and encephalitis. He's a professor of infectious diseases at McGovern Medical School at UT Health. Welcome Dr. Hasbun.

[Rodrigo Hasbun] Thank you very much.

[Sarah Gregory] So, what are arboviruses?

[Rodrigo Hasbun] Arboviruses are a group of viruses that are transmitted by the bite of an arthropod, such as mosquitoes, ticks, or sandflies. There are many arboviruses in the world, such as West Nile, dengue, Zika, chikungunya, Japanese encephalitis, yellow fever. In the U.S. though, the most common arbovirus causing meningitis and encephalitis is West Nile virus.

[Sarah Gregory] How common is West Nile virus in the U.S.? Is a person more likely to get it in Texas than other states?

[Rodrigo Hasbun] Well, West Nile virus has become endemic in the United States since 1999 and there's annual epidemics. It has really spread from the East to the West coast. And more recently, all the cases, the majority of cases have been described in the West coast where more people are probably more susceptible to the virus. A total of 43,937 cases have been reported to the CDC from 1999 until 2015. In Texas, West Nile was first introduced in 2002 and every year we have epidemics. In 2012, Texas had 1,868 cases diagnosed that accounted for one third of all cases in the United States in that year.

[Sarah Gregory] Why are people more susceptible in the West coast?

[Rodrigo Hasbun] Because again the virus has been spreading from the East to the West coast and patients that have exposed to the virus develop West Nile antibodies that make them resistant to get West Nile again and because the virus was introduced in the East coast, more patients in the East coast have been exposed than those in the West coast.

[Sarah Gregory] So is there a season for it?

[Rodrigo Hasbun] Definitely. The West Nile virus season is typically between June and October when the mosquitoes are more active. It is very rare to have cases diagnosed outside the season.

[Sarah Gregory] Tell us about this study. Why did you want to do it?

[Rodrigo Hasbun] Well approximately 50 to 70 percent of patients with meningitis and encephalitis are discharged home without knowing what caused their brain infection. This is very frustrating for patients and their family members. And a part of the problem is that physicians don't test for the most common causes in the majority of patients, including testing for West Nile. Furthermore, we also saw that physicians ordered West Nile tests in the months when there's no West Nile virus activity.

[Sarah Gregory] How did you conduct your study?

[Rodrigo Hasbun] It was a retrospective study of adults and children admitted to 9 hospitals with meningitis or encephalitis in the greater Houston area from January 1, 2005 until December 31, 2010. We obtained clinical information of the patients and documented how many patients had a West Nile virus test ordered by their treating physicians.

[Sarah Gregory] Did the patients you included in your study have anything in common?

[Rodrigo Hasbun] Yes. All the patients in our study were diagnosed with a brain infection, either meningitis or encephalitis, and all of them had a spinal tap done in the hospital.

[Sarah Gregory] What did you find?

[Rodrigo Hasbun] Well, we found that only approximately one third of patients with a brain infection get tested for West Nile virus. Patients that were sicker and had encephalitis were more likely to be tested. We also found that all patients that were tested in the nonendemic months had negative test results. And we hope this study would bring awareness so we can increase testing for West Nile in the endemic season and decrease testing in the nonendemic season.

[Sarah Gregory] So many of these arboviruses seem to have many symptoms in common, including meningitis and encephalitis. Why is it important to test for a particular one?

[Rodrigo Hasbun] There are other arboviruses that cause meningitis and encephalitis in the United States besides West Nile. St Louis encephalitis, La Crosse, Powassan, Eastern Equine encephalitis, and Jamestown Canyon are other viruses as well but their incidence is much lower. It is very important to test for them to get an accurate representation of the true epidemic of these arboviruses. Furthermore, testing only the sicker patients may bias epidemiological studies that are evaluating outcomes of patients with arboviral infections.

[Sarah Gregory] Will the spraying for Zika that some states are now doing also have a positive impact on all these other arboviruses?

[Rodrigo Hasbun] Absolutely. Spraying for Zika will decrease the mosquito population and that will also help with other viruses, such as West Nile.

[Sarah Gregory] Thank you, Dr. Hasbun. Listeners can read the September 2016 article, “Use of Testing for West Nile Virus and Other Arboviruses,” online at cdc.gov/eid.

I'm Sarah Gregory for Emerging Infectious Diseases.

[Announcer] For the most accurate health information, visit www.cdc.gov or call 1-800-CDC-INFO.