



The CBCSF Newsletter

Issue 3, July 2003

A Publication of Community Blood Centers of South Florida, Inc.

Call for directions
Donor Centers

Boca Raton
(561) 451-4389

Cooper City
(954) 680-9410

Coral Springs
(954) 752-6322

Fort Lauderdale
(954) 491-9397

Homestead
(305) 245-4757

Kendall
(305) 270-6425

Key West
(305) 294-7668

Lauderhill
(954) 735-9600

Miami/Civic Center
(305) 549-7214

Miami Children's
Hospital
(305) 667-6503

Mt. Sinai Hospital
(305) 674-2116

Miami Lakes
(305) 362-9713

Palm Beach Gardens
(561) 627-5165

Perrine
(305) 256-1660

Pompano Beach
(954) 782-2972

Sunrise
(954) 747-3921

A New Virus, A New Test, A New Study: West Nile Virus and the Nation's Blood Supply

The United States has embarked on the largest epidemiological study of West Nile Virus (WNV) ever undertaken. Every blood donation is being tested for the presence of WNV using Nucleic Acid Technology (NAT). Donors who are found to be infected will be offered follow-up testing and counseling, and much will be learned about the risks of this virus to the general public.

A Brief History of West Nile Virus

WNV was first discovered in a febrile Ugandan woman in 1937. Further studies demonstrated widespread distribution of the virus in both human and animal populations in Africa. The Culex family of mosquitoes spreads the virus during dawn and dusk feeding times, though the mosquitoes may be active any time during the day.

Sporadic outbreaks of WNV have been documented intermittently in Africa, Asia and more recently in 1998 in central Europe. WNV was unknown in the western hemisphere until 1999 when it was diagnosed in febrile patients in the New York City boroughs of Queens and Brooklyn. In the following year 14 New York residents were hospitalized with WNV. There was one fatality due to encephalitis – generalized inflammation of the brain – which is a rare complication of WNV

Every blood donation is being tested for the presence of West Nile Virus using Nucleic Acid Technology (NAT). Donors who are found to be infected will be offered follow-up testing and counseling, and much will be learned about the risks of this virus to the general public.

infection. How the virus migrated to New York is unknown.

Blackbirds and crows are the primary hosts of

WNV although other species of birds may also act as primary hosts. Large die-offs of blackbirds and crows have occurred. Humans, horses, cows, pigs, and domestic pets may also become infected after a mosquito bite. However, these secondary hosts cannot spread the virus to one another.

Immunity to WNV follows infection within 10 to 14 days. The development of immunity in an affected population effectively ends the outbreak and acts to

prevent further outbreaks until a population of susceptible animals builds up again. This results in sporadic outbreaks of WNV followed by long periods of time during which no disease is detected in any animal population. The disease free intervals may last for years to decades.

Approximately 60% of humans infected with the virus have no symptoms at all. The majority of symptomatic people complain of malaise, dry cough, and rarely mild fever. As seen in birds, infected humans develop long-term immunity to the virus.

Wherever birds fly, the virus is sure to follow. WNV has now been detected in all 48 contiguous states, Mexico, and Canada. One case occurred in Palm Beach County in 2002. There is no way to predict if WNV will be a major health problem during the 2003 mosquito season. If the bird population is currently immune, then there may be no outbreak of WNV in this country at all this year.

Transfusions and WNV

Several organ transplant recipients developed fatal cases of WNV encephalitis in the fall of 2002 which

(continued on back)

Community Blood Centers of South Florida
a non-profit organization

Serving Donors & Patients in Monroe,
Miami-Dade, Broward & Palm Beach Counties
(800) 357-4483 • Email: webmaster@cbcsf.org
<http://www.cbcsf.org>

were traced to one recently infected organ donor. All the affected patients were immuno-suppressed and very ill at the time of their transplants and were unable to resist the virus. Further studies revealed a small number of cases of West Nile Virus infections which were linked to the receipt of blood products from recently infected donors.

Testing for WNV

Essentially everyone who is infected by WNV produces antibodies against the virus which are long lasting, curative, and protective. The problem is that infected people may still spread the virus during the 6 to 14 day "window period" between being bitten by an infected mosquito and the curative antibody response. A blood donor with a positive antibody test may have been infected many months to years earlier and no

longer be infectious at all.

The HIV and hepatitis C viruses also provoke very strong antibody responses in infected people. Testing is done for both the genetic material of these viruses for early detection during the window period and for antibodies, which are seen once the immune system responds. A major difference between these two viruses and WNV is that the immune response to HIV and hepatitis C is not curative and results in the

development of long-term carrier states during which the carriers' blood donations will be highly infectious to patients. The

immune response to WNV is curative, and there is no carrier state in humans.

The Study

As of July 1, 2003 every blood donation is being screened for WNV infectivity by amplifying and detecting the virus's genetic material using NAT technology. All donors found to be positive for the presence of WNV genetic material will be asked to participate in a follow-up study to determine the true risk of the virus to themselves, patients who might receive an infected blood transfusion, and to the general public.

Donors found to be positive for the presence of viral genetic material are being deferred while follow-up testing is done. Donors will be reinstated once the follow-up studies are completed. Since the antibody response to WNV is curative, WNV infected donors will not be infectious within 28 days of the infecting mosquito bite.

The study will hopefully provide sufficient information to determine whether or not WNV testing should be continued indefinitely. This is a harder question to answer than it might seem. There can be no WNV during the winter, for example, as there are no mosquitoes around to spread it. And if transfusion borne WNV infection is only a risk to some patients, perhaps only the blood for those patients needs to be screened.

Viruses identified in donated blood by NAT Technology:

1. HIV 1 and 2 (AIDS virus)
2. Hepatitis C
3. West Nile Virus

●●●●●●●●●●

Viruses identified in donated blood by antibody detection:

1. Hepatitis B
2. HTLV 1 and 2
3. HIV 1 and 2 (AIDS virus)
4. Hepatitis C

Important Information!

Be sure to give the registrar your email address when you register to give blood and receive these newsletters by email or via our website www.cbcsf.org. MSN or AOL users should add webmaster@cbcsf.org to their list of safe contacts.

Confidentiality Statement: Community Blood Centers of South Florida is committed to respecting your privacy. We will not share, rent, or sell personal information provided by you, including your email address, to other parties. The information you provide will only be used to support your relationship with us as a blood donor or potential donor.

For more information:

United States Food & Drug Administration:
<http://www.fda.gov/cber/safety/westnile.htm>

New WNV related questions of blood donors:

1. In the past week, have you had a fever with headache?
2. Have you read and do you understand the NAT Research Study Information Sheet?