SCANNING THE LITERATURE

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Is WNV Likely to Destroy My Nervous System?

Sejvar JJ, Haddad MB, Tierney BC, et al. Neurologic manifestations and outcome of West Nile virus infection. JAMA 2003;290:511-5.

Context: The neurologic manifestations, laboratory findings, and outcome of patients with West Nile virus (WNV) infection have not been prospectively characterized.
Objective: To describe prospectively the clinical and laboratory features and long-term outcome of patients with neurologic manifestations of WNV infection.
Design, Setting, and Participants: From August 1 to September 2, 2002, a community-based, prospective case series was conducted in St Tammany Parish, La. Standardized clinical data were collected on patients with suspected WNV infection. Confirmed WNV-seropositive patients were reassessed at 8 months.
Main Outcome Measures: Clinical, neurologic, and laboratory features at initial presentation,and long-term neurologic outcome.
Results: Sixteen (37%) of 39 suspected cases had antibodies against WNV; 5 had meningitis, 8 had encephalitis, and 3 had poliomyelitis-like acute flaccid paralysis. Movement disorders, including tremor (15 [94%]), myoclonus (5 [31%]), and parkinsonism (11 [69%]), were common among WNV-seropositive patients. One patient died. At 8-month follow-up, fatigue, headache, and myalgias were persistent symptoms; gait and movement disorders persisted in 6 patients. Patients with WNV meningitis or encephalitis had favorable outcomes, although patients with acute flaccid paralysis did not recover limb strength.
Conclusions: Movement disorders, including tremor, myoclonus, and parkinsonism, may be present during acute illness with WNV infection. Some patients with WNV infection and meningitis or encephalitis ultimately may have good long-term outcome, although an irreversible poliomyelitis-like syndrome may result.

Comments: Many of our patients seem fearful of neurological complications of WNV, and it is a pleasure to have this article which provides solid data. All patients (5/5) in this study with WNV meningitis appeared to recover. Most with WNV encephalitis (5/8) had excellent outcomes by 4 months. The three patients with WNV-associated acute flaccid paralysis did not do well. In reviewing this information with concerned patients, there are a few key ideas I stress to keep it in context:

1. No one knows the denominator of how many people get WNV, since testing for it has been limited in the past to only those who are seriously ill. Most likely, the risk of serious illness from WNV is low, and for those who are seriously ill from it, the risk of "an irreversible poliomyelitis-like syndrome" is not high.

2. However, channel whatever fears there are into good prevention techniques, since there is little to be done once WNV has caused serious illness.

Stopping WNV Via Transfusions

Biggerstaff BJ, Petersen LR. Estimated risk of transmission of the West Nile virus through blood transfusion in the US, 2002. Transfusion 2003;43:1007-17.

Background: The West Nile virus (WNV) epidemic in 2002 in the US saw over 3300 reported human cases of WNV disease, with over 2300 reported cases of WNV encephalitis and meningitis. The first documented cases of transfusion transmission of WNV through voluntary blood donation also occurred.
Study Design and Methods: Case onset dates from the 2002 WNV epidemic in the US were used to estimate the risk of transfusion-associated transmission with statistical resampling. An easily computed approximating formula for the mean risk was derived. Estimates were computed for six high-incidence states and metropolitan areas.
Results: Mean and maximum risk of transfusion-associated WNV transmission (per 10,000 donations) during the epidemic period for the selected states ranged from 2.12 to 4.76 and from 4.34 to 10.46, respectively; for the selected metropolitan areas, they ranged from 1.46 to 12.33 and from 3.02 to 21.32, respectively.

Conclusions: Estimates of the mean risk of WNV transmission by transfusion ranged from 1.46 to 12.33 per 10,000 donations for six high-incidence metropolitan areas during the 2002 epidemic. Because the risk was highly geographically and temporally variable, computation of geographically localized estimates is recommended. The derived approximating formula for the mean risk performed well for the estimates given.

Comments: A concern for both doctors and patients has been the risk of transmitting WNV through a blood transfusion. This article documents that risk. The authors use resampling techniques for high incidence areas and estimate that about 1.5 to 21 cases of WNV per 10,000 transfusions are caused by the transfusion. The risk was very variable based on location, so local estimates from your blood bank may be the best data to use in counseling patients.

Ochsner, along with a number of other blood banks around the country, is participating in a WNV detection research program that will screen all donated blood for WNV. If successful, this will hopefully reduce the risk of WNV via transfusion to zero or close to it. You may want to check with your local blood bank if they are participating, so accurate risk information can be passed along to patients. This study may also provide the first evidence of the actual incidence of WNV (at least among blood donors) as there may or may not be a large group of people with asymptomatic WNV.