

# Introduction to the West Nile Virus Issue

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**W**est Nile virus (WNV), a flavivirus and member of the Japanese encephalitis virus antigenic complex, has been recognized as a cause of human infection since 1934, but has primarily affected northern Africa, the Middle East, Southern and Eastern Europe, Southwestern Asia, and Australia. By routes that are unclear, the virus spread to North America in 1999 establishing a foothold in New York City and then spreading south and west to involve 44 states and the District of Columbia by the end of 2002. Molecular genetics have demonstrated that the virus circulating in the United States is genetically identical to a virus identified in Israel between 1997 and 2000 (1).

Birds are the primary amplifying hosts, and the virus is maintained in an avian-mosquito cycle. Other vertebrates, such as humans and horses, are incidentally infected and do not play a large role in the transmission cycle (2). Most human infections have resulted from mosquito bites, but other routes such as blood transfusion, organ donation, accidental laboratory inoculation, and breast feeding have been documented in the US outbreaks.

Most infected patients are asymptomatic, but mild undifferentiated febrile illness lasting 3-6 days is common. It may be associated with malaise, anorexia, nausea, vomiting, eye pain, headache, and morbilliform rash (3). Although < 1% of individuals who are infected with WNV develop meningoencephalitis or acute flaccid paralysis, those neurologic cases in the recent North American outbreaks have demonstrated more meningoencephalitis than meningitis alone (3). Another unique feature in this outbreak has been the poliomyelitis-like destruction of anterior horn cells in the spinal cord resulting in flaccid paralysis. Those patients who are sick enough to be hospitalized for evaluation and management of WNV infection have had substantial morbidity, with fewer than half returning to their previous functional level (4).

Treatment of this infection is supportive. There have been no controlled studies so far to indicate benefit of antivirals like ribavirin or immune-modulators like interferon. No human vaccine is yet available, though an inactivated vaccine is available for horses. The only prospects of control are those

that interrupt mosquito reproduction and contact between humans and mosquitoes.

This fascinating epidemiologic drama has played out in our own back yard in Louisiana, but its future perspective is unknown. Thus far in 2003, more than 60 cases have been reported in Louisiana, but fortunately, the pace of the outbreak appears to be slower than that which we saw in 2002.

## REFERENCES

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