Disrupted Ecology May Protect La. From West Nile

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A mosquito-eradication program is underway in storm-ravaged Gulf coast states, and federal officials hope that effort, combined with the hurricane's impact on the vector cycle, will prevent a surge in West Nile virus and other mosquito-borne diseases.

The aerial spray program began in mid-September and will continue as long as is necessary to control mosquito populations, according to the Louisiana State Department of Health.

Although the huge expanses of standing floodwaters are conducive to a mosquito population explosion, the total disruption of the region's normal ecology may discourage mosquito-borne epidemics, said Jennifer Morcone, a spokesperson for the Centers for Disease Control and Prevention.

"Historically, we have not seen increases in these diseases after a storm like this," she said. "You need a bird population to fuel the transmission cycle and, right now, the bird population in these areas is almost nonexistent."

However, she said, the CDC has deployed entomologists to monitor mosquito populations and to assist with vector control in the affected areas.

The Louisiana Department of Health and Hospitals—in coordination with the Louisiana Department of Agriculture and Forestry, the CDC, the Agency for Toxic Substances and Disease Registry, U.S. Environmental Protection Agency, the Department of Defense, and local mosquito control districts—is implementing a plan to reduce mosquitoes and flies in the areas affected by Hurricane Katrina.

The health and hospitals department had developed a management plan in anticipation of the hatching of mosquitoes and flies due to the massive flooding in the area. Mosquito control is needed to protect public health from the nuisances and diseases they transmit; flies will also be monitored. The plan will continue, based on field monitor of mosquitoes and flies in the region.

People face two types of increased risks for mosquito-borne diseases in the region: the rise in the number of mosquitos and increased exposure to the insects. "People are spending a lot more time outside, and

New Virus Found To Infect Lower Respiratory Tract

A newly identified parvovirus appears to cause lower respiratory tract infections in children, a team of scientists in Sweden and Singapore reported.

They detected the virus—provisionally named human bocavirus (HBoV)—through a rapid new system for large-scale molecular virus screening of clinical samples without the need for cultures and with minimal hands-on effort. Their method should make it feasible to systematically explore all viruses that affect humans, including unidentified ones, reported Tobias Allander, M.D., of Karolinska University Hospital, Stockholm, and his associates (Proc. Natl. Acad. Sci. USA 2005;102:12891-6).

To assess HBoV's clinical effects, the investigators screened culture-negative nasopharyngeal aspirate samples from 266 pediatric patients and 112 adults seen in clinics. Seven samples from infants and children were positive for HBoV. A subsequent retrospective study of all 540 aspirates available from the pediatric infectious diseases ward at the hospital found HBoV in 17 patients (3%), and 14 of these had no other viruses present. HBoV is the likely cause of the respiratory distress and fever in these patients, the investigators concluded.

Seven of the 14 patients underwent chest x-ray, and results showed interstitial bilateral infiltrates in 6 patients.

Approximately 250,000 infants and young children are hospitalized each year in the United States for lower respiratory tract infection, and no etiologic agent is found in 12%-39% of cases.

The virus screening system that detected HBoV employs host DNA depletion, random polymerase chain reaction amplification, large-scale sequencing, and bioinformatics.

—Sherry Boschert

even when inside, they may have broken windows and screens that let mosquitoes into the house," Ms. Morcone said.

It's too soon to predict what impact Hurricane Katrina will have on West Nile virus in the Gulf region, she added. "What we do know is that the virus did exist in every one of these states before the storm and that it is still there. We want people to take precautions against exposure, and we will facilitate that as much as possible."

As of early September, 821 cases of West Nile virus—of which 18 cases were fatal—had been reported in the United States, marking this as the slowest West Nile season since 2002.

By early September 2002, 737 cases had been reported, with 35 fatalities. Numbers soared in 2003 to almost 1,900, with 37 fatalities, and stayed high last year, with 1,191 cases and 30 fatalities.

As in previous years, the highest number of cases (268) occurred in California. Of those, 7 have been fatal; 93 showed neurologic complications (West Nile meningitis, encephalitis, or myelitis). Other hard-hit states include South Dakota (138 cases; 1 fatality; 25 neuroinvasive illnesses); Illinois (89 cases; 1 fatality; 52 neuroinvasive); and Louisiana (52 cases; 4 fatalities; 40 neuroinvasive). Texas has reported only 27 cases, but almost all of them (24) were neuroinvasive; there was 1 fatality.

The reason for the decline this year is unclear, Ms. Morcone said. "If there's one thing we know about West Nile, it's that there's no such thing as a typical season. We have seen areas with large epidemics 1 year and very small case counts the next. Weather and ecology are among the factors that play a part in West Nile prevalence."

Even though the cases are relatively low, physicians should still stress prevention to their patients. Repellents with DEET(*N, N*-diethyl-m-toluamide) are most effective for those who are outdoors for extended periods. Repellents with oil of lemon eucalyptus and picaridin are probably sufficient for "backyard exposure," she said.

West Nile virus has also been identified in blood from 163 blood donors, according to the CDC. Most of the donors (49) were from California. Other states with high numbers were Texas (32), Nebraska (22), South Dakota (14), and Louisiana (10).

Of these donors, 3 subsequently developed West Nile neuroinvasive illness, 38 developed West Nile fever, and 3 developed other illnesses. ■

Use Prednisolone When IVIG Fails In Kawasaki

A 3-day course of prednisolone appears effective in Kawasaki disease patients who are unresponsive to multiple infusions of intravenous immunoglobulin, Seiichiro Takeshita, M.D., and colleagues reported.

Their success in treating nonresponders with prednisolone infusion suggests that IVIG-resistant patients with Kawasaki disease may not require steroid pulse therapy, which has been associated with an increased risk of coronary aneurysm rupture, hypertension, seizures, and gastric erosion in this group (Clin. Pediatr. 2005;44:423-6).

Five of six children became afebrile with a significant decrease in CRP within 24 hours of their first course of prednisolone.

Dr. Takeshita of the University of Shizuoka, Japan, and his colleagues administered 3-day courses of prednisolone every 8 hours (1-2 mg/kg per day) to six children, aged from 10 months to 9 years, who did not respond to repeated courses of IVIG for Kawasaki disease. Five of the children also received ulinastatin, a serine protease inhibitor not currently available in the United States.

Three patients had complications of the disease, including arthritis, myocarditis, and depressed left ventricular systolic function. All patients had dilated coronary arteries before prednisolone was administered.

Five of the children became afebrile and had a significant decrease in C-reactive protein (CRP) levels within 24 hours of their first course of prednisolone.

The sixth patient had a persistent low-grade fever and high-CRP level after the first course, and developed a high-grade fever and high-CRP level 3 days after the first course ended. He then received a second, 3-day course of prednisolone (1.5 mg/kg per day). Within 24 hours, he became afebrile and had a significant drop in CRP level. No patient experienced an adverse event related to the prednisolone. No patient experienced further progression of coronary artery dilation; all dilated arteries returned to normal diameters during the follow-up period that ranged from 16 months to 6 years.

—Michele G. Sullivan