

Prophylaxis Still Essential After Rabies Exposure

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SCOTTSDALE, ARIZ. — Despite the first known survival of an unvaccinated rabies patient, prophylaxis still is the only proven defense after exposure, Dr. L. Barry Seltz told physicians at a pediatric update sponsored by Phoenix Children's Hospital.

"There is no established, effective treatment," Dr. Seltz of the University of Arizona in Tucson warned in a talk that addressed misconceptions about human rabies risk and why current thinking discourages vaccination in the gluteal area.

The treatment that saved the Wisconsin teenager (N. Engl. J. Med. 2005;352:2508-14) needs to be duplicated, according to Dr. Seltz. Vaccination can be before or after exposure, he said, but it must be done whenever there is reason to suspect exposure to the rabies virus.

Exposure is not always easy to document. For Dr. Seltz, a key lesson from the survival of the 15-year-old girl is the importance of taking a good patient history.

"She said she had been bitten by a bat. She didn't think anything of it," he said, crediting careful questioning by the teenager's primary care physician with unearthing this crucial piece of information after the patient became ill. She had not previously reported the bite.

Despite public fear of rabid dogs and widespread rabies in wild raccoons on the Eastern seaboard, Dr. Seltz said that most human rabies cases in the United States involve bats.

From 1990 to 2004, he said there were

47 cases, including 10 cases acquired abroad. Of the 37 infections that originated within this country, 34 were determined to involve a bat variant of the rabies virus. Only one came from a raccoon.

"Bat bites are not dramatic. You may not recognize them when they occur," Dr. Seltz said, warning that bat bites also can be difficult to verify. As examples of patients he would vaccinate in the absence of certain exposure, Dr. Seltz cited the person who was asleep

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DR. SELTZ

when a bat flew into a room or a young child who cannot give a reliable history. Other than a bite from a rabid animal, he said virus transmission can occur via "contamination of nonintact skin or mucous membranes with saliva from a rabid animal." Cornea transplantation or solid organ transplantation from an infected donor also can transmit the virus.

"Petting a rabid animal is not an exposure. Contact with blood, urine, or feces of an infected animal is not exposure," he said.

The virus has a 20- to 60-day incubation period, but Dr. Seltz said one long-term case has been reported. That involved a boy who became ill 6 years after he emigrated from the Philippines. The rabies strain came from a dog native to the Philippines.

Ten days is adequate for observation of a dog that appears healthy after it has bitten someone in the United States, according to Dr. Seltz. If the dog has been infected, the virus will present itself quickly.

All told, six patients have survived after the onset of rabies worldwide, he said. Five had been vaccinated.

To control rabies in humans, he urged

preexposure vaccination of veterinarians, animal handlers, laboratory workers, people moving to areas where dog rabies is common, and those who engage in activities that bring them in frequent contact with wildlife.

The postexposure protocol is three pronged, he said: local wound care, active immunization, and passive immunization with immune globulin. "Cleaning [the wound] is critically important," he said. "Animal studies show that wound cleaning can reduce the risk of rabies by 50%."

The three vaccines currently available in the United States are all inactivated viruses. Dr. Seltz advised that they should be given in five doses on days 0, 3, 7, 14, and 28. These should not be injected in the gluteal area, he warned, as it has been as-

sociated with lower response and prophylaxis failure.

Exposed patients should receive a 20-IU/kg dose—no more, no less—of immune globulin prepared from the plasma of immunized human donors, Dr. Seltz added. "Do not give more," he said. "It will inhibit antibody response."

In five cases of children who died despite receiving the full postexposure protocol for multiple bites, their wounds were not sufficiently infiltrated with immune globulin, according to Dr. Seltz. If a child has multiple wounds, he said to dilute the 20 IU/kg dose in normal saline solution and use the extra volume to make sure all the wounds are infiltrated.

"You spread it around," he said. "Do as much as you can." ■



Wild Animals Pose Main Threat in U.S.

Dogs are the first animal that comes to mind when most people think about rabies, but Dr. Seltz said they are not much of a threat in the United States.

In 2004, only 94 rabid dogs were reported in this country, according to Dr. Seltz. Among domestic animals, there were more cases of rabid cats and rabid cattle: 281 and 115 animals, respectively.

Dog bites do account for most of the 50,000 human rabies cases worldwide each year, he said. In the United States, however, 92%-94% of animal rabies comes from wild animals.

The largest concentration of infected animals has been identified to date on the East Coast, Dr. Seltz said. Nationwide, in 2004, there were 2,400 rabid raccoons, 1,800 skunks and 1,300 bats.

Although rabid bats are far less common than rabid raccoons, Dr. Seltz said that they are more dispersed and more likely to come in contact with people. Hence, rabid bats are most often implicated in human infections. Squirrels are rarely found to be rabid, he said, as they generally do not survive the initial attack of a rabid animal.

Rabies has been found throughout the country, Dr. Seltz continued, except for Hawaii. It is the only state with no reports.

In Arizona, where Dr. Seltz practices and where the meeting took place, he said there were 169 cases of animal rabies in 2005—the most ever recorded. These rabid animals included 84 bats, 67 skunks, 12 foxes, 2 bobcats, and 1 raccoon.

CLINICAL CAPSULES

CAP Mortality Reduced by Vaccine

Prior pneumococcal vaccination significantly improves outcomes in adults hospitalized with community-acquired pneumonia, results of a recent retrospective study suggest.

Compared with unvaccinated adults, those who had received the pneumococcal vaccine were 50% less likely to die while in the hospital and 33% less likely to develop respiratory failure, after adjustment for confounding factors (Clin. Infect. Dis. 2006;42:1093-101).

"Whether or not [the vaccine] prevents pneumonia is almost irrelevant—it clearly has an effect on reducing death in the individuals who get pneumonia," Dr. David N. Fisman, lead study author, said in a statement released by the Infectious Diseases Society of America.

Dr. Fisman of Drexel University in Philadelphia and his associates evaluated the benefits of prior pneumococcal vaccination in 62,918 consecutive adult patients hospitalized with community-acquired pneumonia at 109 hospitals.

In addition to the reductions in death or respiratory failure, vaccination also sig-

nificantly reduced the in-hospital risk of acute respiratory distress syndrome, sepsis syndrome, and cardiac arrest. Overall, 12% of the cohort had received the vaccination, 23% were unvaccinated, and the vaccination status was unknown for the remaining 65% of the patients.

Acute Infection Ups Risk of DVT

The risks of deep vein thrombosis and pulmonary embolism appear significantly increased after acute urinary tract or respiratory infection, according to a large case-series study.

The risk rates of both DVT and PE were highest—almost double that at baseline—in the first 2 weeks after infection, and fell off over subsequent months, returning to baseline after 1 year.

In the first 2 weeks after acute urinary tract infection (UTI), the incidence ratio was 2.10 for DVT and 2.11 for PE. Within 2 weeks after an acute respiratory infection, the overall incidence ratio of DVT was 1.91. A reliable estimate of the risk ratio for PE was not possible for respiratory infection because of the possibility of diagnostic misclassification, reported Liam

Smeeth, Ph.D., of the London School of Hygiene and Tropical Medicine and his colleagues (Lancet 2006;37:1075-9).

Using medical records from 1987 to 2004 provided by the U.K. Health Improvement Network's electronic database, the researchers selected 7,278 individuals for analysis from 10,284 who had a first DVT, and 3,755 from 5,574 who had a first PE.

The mean age at diagnosis was 68 years for both DVT and PE, and women made up 58% of the DVT and 57% of the PE populations. The size and accuracy of the Health Improvement Network database—over 20 million person-years of observation from 220 general practices—allowed for detailed analysis and elimination of potential confounders.

The study "confirms that acute infection should be considered in the list of precipitants for venous thromboembolic disease," the authors wrote.

Test for HIV if Patient Has Delusions

Delusions of parasitosis are a "red flag" for possible HIV infection, Dr. Marcus Conant said at the annual meeting of the California Society of Dermatology and Dermatologic Surgery.

What's the connection? It's crystal

methamphetamine, a highly addictive drug that undermines judgment, heightens the sex drive, and is popular in groups where the incidence of HIV infection is rising. The drug often causes delusions, such as the feeling that bugs are crawling on or within the skin, said Dr. Conant, a dermatologist in private practice in San Francisco.

"Every patient I've seen in 2 years with delusions of parasitosis—and I've seen more and more and more of them—is on crystal meth," Dr. Conant said.

The incidence of HIV infection is rising rapidly among women and minorities, as well as young gay men. Crystal meth users may be having sex with at-risk members of any of these groups. "You need to offer them an HIV test," he advised.

Other red flags include presence of any major STD, including cutaneous STDs such as genital herpes, genital warts, and even crab lice.

For patients reluctant to have an HIV test, he suggested telling them you want "a look at your immune function to make sure cancer or leukemia isn't causing your problem." Many patients will then agree to a CD4 count, which, if low, may persuade them to consent to an HIV test.

—From staff reports