

Unprotected People #61

Tetanus

Tetanus among injecting-drug users—California, 1997

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Tetanus among injecting-drug users—California, 1997

During 1997, 47 cases of tetanus were provisionally reported in the United States; 11 of these were reported from California. Of these 11, six (55%) occurred among injecting-drug users (IDUs). The substantial proportion of cases among IDUs prompted a review of reported tetanus cases in California. This report summarizes reported cases of tetanus in IDUs in California during 1987-1997 and presents two case reports for 1997.

Summary of Cases

The annual number of tetanus cases in IDUs in California has increased steadily from one in 1987 to six in 1997. Of 67 cases of tetanus reported in California during 1987-1997, a total of 27 (40%) occurred in IDUs. Of these IDUs, 24 (89%) were Hispanic. Of the 27 cases of tetanus in IDUs, 24 (89%) had no antecedent injuries other than drug injection. Abscesses were observed at injection sites for 18 (69%) patients. Information about injecting technique was provided for 14 patients, all of whom reported subcutaneous injection (i.e., "skin popping"). All 10 patients for whom the specific drug injected was reported had used heroin, either exclusively or with other drugs.

Case Reports

Case 1. In June 1997, the California Department of Health Services received a report of tetanus in a 59-year-old Hispanic woman who had injected heroin intermittently throughout her life. She had resumed daily heroin injection 2 years before onset of disease. On June 18, she sought treatment for

opisthotonos at a local emergency department. Tetanus was diagnosed, and she was hospitalized that day. She had multiple abscesses at injection sites on her arms and feet. Despite mechanical ventilation and treatment with tetanus immune globulin (TIG), she died on June 23. Her tetanus vaccination status was unknown. She had had access to sterile syringes, alcohol, and other supplies for injections because her husband was diabetic. Her family indicated she had used hygienic technique when injecting and had not shared injecting equipment.

Case 2. On July 17, 1997, a 45-year-old Hispanic man who had injected heroin subcutaneously five times a day sought treatment at a local emergency department because of respiratory failure and tremors. He reported having used diazepam in an attempt at detoxification, and he was hospitalized that day with a diagnosis of drug withdrawal. He had persistent spasms, and tetanus was diagnosed on July 21. TIG was administered, and he was placed on mechanical ventilation. *Clostridium subterminale* and *Staphylococcus aureus* were cultured from a wound on his right arm. He was hospitalized for 13 weeks, including 4 weeks in a rehabilitation hospital, then released. His tetanus vaccination history was unknown.

Editorial Note

When the anaerobe *C. tetani* colonizes devitalized tissue, the exotoxin tetanospasmin is disseminated to inhibitory motor neurons, resulting in tetanus. The spastic paralysis of tetanus can persist for several weeks. Predisposing wounds include open fractures, abrasions, abscesses, and punctures. The diagnosis is usually made clinically. Patients often require mechanical ventilation, and the case-fatality rate is 25%.

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Tetanus among IDUs has been reported previously, and the Advisory Committee on Immunization Practices considers IDUs to be at high risk for tetanus. In California, subcutaneous injection of Mexican black tar heroin has been associated with a recent increase of wound botulism caused by infection with *C. botulinum*. The annual number of wound botulism cases reported in California increased from one in 1990 to 23 in 1995. During this period, all but one case occurred among IDUs. Both the spastic paralysis of tetanus and the flaccid paralysis of wound botulism are caused by ubiquitous anaerobic soil bacteria.

During 1987-1997, Hispanics constituted 60% of all patients with tetanus reported in California and 89% of IDU-associated cases. Mexican Americans are the predominant Hispanic population in California. A recent serologic survey indicated that 58% of Mexican Americans, compared with 73% of non-Hispanic whites, had protective levels of antibody to tetanus toxoid. This increased susceptibility may, in part, explain the disproportionate occurrence of tetanus among Hispanic IDUs.

Tetanus cases are reported to local and state health departments through a passive reporting system, and both cases and risk factors probably are underreported. Drug use preceding tetanus may be underestimated because of limited reporting by patients or clinicians.

Drug injection provides several potential sources for infection with *C. tetani*, including the drug, its adulterants, injection equipment, and unwashed skin. Although recommendations to prevent transmission of human immunodeficiency virus among IDUs may limit infection from contaminated injection equipment, these measures may not be effective against spores inoculated from the skin or contained in the drug. Therefore, prevention efforts should emphasize vaccination for tetanus.

Tetanus is almost entirely preventable through vaccination and appropriate wound care, including administration of TIG when appropriate. A primary series of three doses of tetanus-diphtheria toxoid (Td) and subsequent booster doses of Td every 10 years are highly effective in preventing tetanus. IDUs have frequent contact with the medical system but poorer continuity of care; each clinical encounter should be used for assessment and, when needed, completion of tetanus vaccination.

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