EPIDEMIOLOGY SECTION

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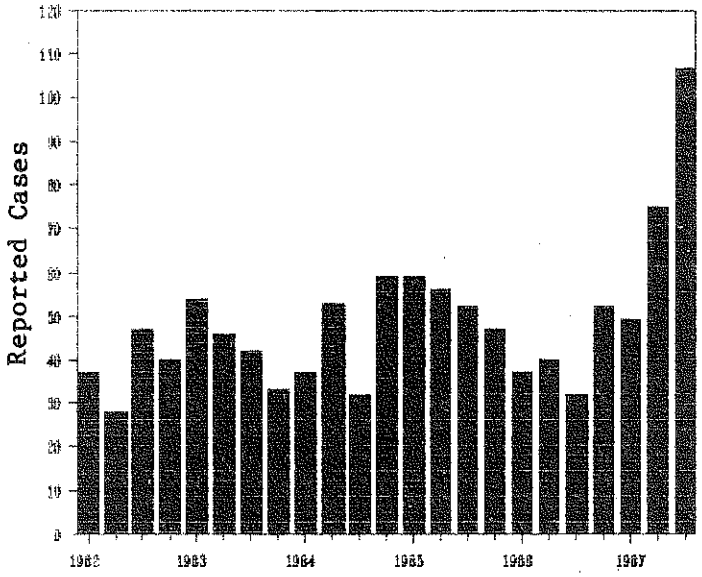
SYPHILIS INCREASE

This year an unprecedented increase in the number of reported cases of infectious syphilis (primary and secondary stages) has occurred throughout much of Connecticut (Figure 1). Two hundred thirty-two cases of primary and secondary (P&S) syphilis were reported in the first nine months of CY 1987, a 123-case increase (113%) over the total for the first nine months of 1986 (Table 1). The 232 cases is the highest consecutive nine month total seen in the state in over 15 years.

Table 1. Primary and secondary syphilis by town, Connecticut, 1987 v 1986 to date.

Town	1/87-9/87	1/86-9/86	% Change
Hartford	63	39	+ 62%
Bridgeport	45	19	+137%
New Haven	20	17	+ 18%
Windham	20	0	-
Waterbury	19	3	+533%
Stamford	8	5	+ 60%
New Britain	5	4	+ 25%
New London	4	2	+100%
Norwalk	4	5	- 20%
Remaining Towns	44	15	+193%
State Total	232	109	+113%

Figure 1. P&S Syphilis, Connecticut, by quarter, 1982 - 1987.



The increase in Connecticut parallels what is being seen in other areas of the United States. New York City, Florida and Los Angeles have had dramatic increases in P&S syphilis this year. Nationally, P&S syphilis is 31% higher than the total for last year's corresponding period (1).

The reasons for the increase in Connecticut are uncertain. As reflected in Tables 1 and 2, the increase is being seen throughout much of the state and among all major racial/ethnic groups.

Nearly all of the cases (92%) involve heterosexuals. At least 20% of this year's cases have been in prostitutes, their patrons and their sexual partners. In 1985, less than 8% of the P&S cases followed epidemiologically were prostitute-related. All of the prostitutes involved in this year's syphilis increase have also been intravenous (IV) drug users.

Table 2. Primary and secondary syphilis by race and ethnicity, Connecticut, 1987 v 1986, to date.

	1/87-9/87	1/86-9/86*	% Change
White	77	18	+327%
Black	101	63	+ 60%
Hispanic	54	25	+116%

*Information not available for three cases

An increase in lesion syphilis raises two concerns. First, with nearly all of the current cases being seen among heterosexuals, an increase in congenitally acquired syphilis is likely to occur; 36% of the 232 cases reported thus far this year have been women of child-bearing age.

Second, genital ulcerations, such as those typically seen in primary and secondary syphilis, have been associated with higher rates of infection with human immunodeficiency virus (HIV). This may mean that increases in lesion syphilis will result in increases in HIV infections, particularly if syphilis continues to increase among prostitutes (2).

In view of this increase in syphilis, the State Sexually Transmitted Disease Control Program advises health providers to follow these recommendations:

1. Any patient presenting with symptoms suggestive of early syphilis should be evaluated serologically, and if possible, by darkfield microscopy, to exclude or confirm the presence of syphilis.

2. Patients with recent exposure to syphilis should be given empiric preventive treatment to abort possible incubating syphilis.

3. Women receiving prenatal care should be tested for syphilis twice during their pregnancy as required by health statute, first at the time of first prenatal visit, the second during the final trimester.

4. Health providers attending to patients with any acute sexually transmitted disease (STD), especially if there is history of IV drug use, prostitution, or exposure to prostitutes, should evaluate such patients for other STDs. Counseling about HIV transmission and prevention should be included and HIV antibody testing offered.

5. Cases of lesion syphilis should be reported immediately to the State STD Control Program so disease intervention activities can be implemented immediately.

Health professionals in need of further information on syphilis and other STDs, or who wish to report cases of lesion syphilis by phone, can call the State STD Control Program at 566-4492.

References

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AIDS UPDATE

Confirmatory Testing for HIV Antibody

As serologic testing for antibodies to the human immunodeficiency virus (HIV) becomes more common, it is increasingly important for physicians to become familiar with the test methodologies. Confirmatory testing, an important part of the HIV antibody testing process, is essential for maintaining the extraordinarily low false positive rates associated with the current HIV antibody tests.

Criteria for a reactive Western Blot (WB) were established in March 1987 by the Association of State and Territorial Public Health Laboratory Directors (ASTPHLD). These criteria, which are adhered to by the Virology Laboratory, Department of Health Services (DHS), specify that the WB procedure of choice must be able to resolve HIV bands p24, gp41 and gp120/160. Sera which are reactive with at least two of these three bands are considered positive for HIV antibody. Sera which are reactive with one of the three bands are considered indeterminate and will be tested by another method (such as IFA) or another serum will be requested for examination.

The immunofluorescence (IFA) technique for confirmation of HIV antibodies from sera repeatedly reactive by EIA has been used since at least 1985. Because it is easier to perform and is less expensive than WB, an increasing number of laboratories have been using IFA. Several papers have been published demonstrating the reliability of IFA as compared to WB(1,2). In October, 1987, the Virology Laboratory, DHS, began the routine use of the IFA technique for supplemental or confirmatory testing. Western blot is used when the IFA is indeterminate.

Both ASTPHLD and the Centers for Disease Control (CDC) recognize IFA as equivalent to WB for confirmation of repeatedly reactive EIA results. The California State Health Laboratories, which probably test as many sera for HIV antibodies as any state in the country, use the IFA technique as their primary method. At last count (May, 1987), twelve State Health Laboratories are using IFA.

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HUMAN RABIES DESPITE TREATMENT WITH RABIES IMMUNE GLOBULIN AND HUMAN DIPLOID CELL RABIES VACCINE - THAILAND

On March 6, 1987, a rabid dog severely bit a ten-year-old Thai boy on the left calf and forehead and on the right eyelid through to the bulbar conjunctiva. The wounds were immediately flushed with saline alone and sutured at a local hospital. Tetanus toxoid and suckling mouse rabies vaccine were given intramuscularly (IM). The following day, 21 hours after exposure, the patient received 1 mL human diploid cells rabies vaccine (HDCV) IM in the gluteal area. Subsequent 1 mL injections of HDCV were given IM in the gluteal area on days 2, 6, and 13. Twenty-one days after exposure, the patient developed fever, headache, lethargy, vomiting, and progressive paralysis of all extremities. The patient died 15 days later, 36 days after exposure. His brain tissue was positive for rabies virus by direct fluorescent antibody.

Editorial Note: This is the second laboratory-confirmed case of rabies reported to have occurred despite administration of HDCV and HRIG within 24 hours of exposure. The previous case involved a 20-year-old South African male who received HRIG 13 hours after a rabid mongoose bit

his finger. One milliliter of HRIG was infiltrated around the wound, and the remainder of the dosage was given IM in the deltoid (1). All injections of HDCV (days 1, 3, 7 and 14) were given IM in the gluteal area. On day 21, the patient developed paresthesia of the bitten arm. He died of rabies 16 days later.

There are several possible explanations for the observed failure of HDCV and HRIG to protect against rabies in these cases. Although the timing of vaccine administration was similar to the recommended schedule in both cases (2), vaccine was given in the gluteal area. A reduced antibody response has been shown when hepatitis B vaccine is administered in the gluteal area instead of the deltoid

(3). Presumably, subcutaneous fat in the gluteal area may interfere with the immunogenicity of HDCV. Moreover, only saline solution was used to flush the Thai patient's wounds. Cleaning bite wounds with saline alone has been shown to be less effective in decreasing the risk of rabies than cleaning with anti-viral solutions, such as soap and water (4). Finally, persons with severe bites to the head and digits, sights of rich innervation, are more likely to develop rabies than persons bitten elsewhere (5). Inoculation of rabies virus near or into the peripheral nerves might bypass the protection conferred by rabies immune globulin and vaccine, both of which are ineffective after the virus invades the nervous system. Evidence did not indicate immune deficiency in these patients or decreased immunogenicity of the vaccine lots. Also, HDCV has been shown to be stable even when exposed to high ambient temperatures for up to 11 weeks (6).

Approximately 18,000 persons receive rabies postexposure prophylaxix in the Unites States per year (CDC, unpublished data). Severe attacks by rabid wild animals and dogs like that suffered by the Thai patients are rare in developed countries. No treatment failures have been reported when the recommended postexposure prophylaxis regimen of wound cleaning, HRIG, and 5 doses of HDCV have been strictly observed (2). Although the reasons these two patients developed rabies are unknown, proper wound management and proper administration of HRIG and HDCV might have prevented disease. Wounds inflicted by animals suspected or confirmed to be rabid should be immediately and thoroughly cleaned with soap and water. If anatomically possible, up to half of the HRIG dose should be infiltrated around the wound and the rest given IM in the gluteal area or lateral thigh. For postexposure prophylaxis, adults and children should always receive HDCV IM in the deltoid. Infants can be given the vaccine in the anterolateral upper thigh.

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