YAKIMA HEALTH DISTRICT

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Fatal Soft Tissue Infections Among Drug Injectors (cont'd.)

ture does not destroy spores which could be in the tar. Subsequent injection, germination, anaerobic growth, and toxin release can then lead to the syndromes described, depending on the specific species involved and toxin produced. Combustion of black tar heroin should kill the spores, so heroin *smokers* are not to be at risk for acquiring infection through inhalation.

Abscesses and soft tissue infections in drug injectors (and necrotizing fasciitis, in general) can also be caused by streptococci, staphylococci, and mixed aerobic-anaerobic infections. In addition to drug injection, inciting events include superficial skin infections, post-surgical infection, or trauma. Among injectors, subcutaneous or intramuscular injection is a risk factor for developing skin infections. This practice is common among chronic users who are either unable or reluctant to inject the drug intravenously. Other contributing factors include poor injection site hygiene, syringe reuse, or contaminated drugs. IDUs often contaminate needles by touching them to surfaces, mouths, or hands. Health care providers seeing drug injectors should advise them to avoid injecting black tar heroin; to always use a fresh-unshared needle; never share waters, filters, or cookers; and to always pre-clean injection sites with soap-and-water or alcohol swabs. Tetanus and hepatitis immunization should be complete. Both injectors and clinicians should remain vigilant for abscesses and superficial infections and pursue prompt evaluation and management when they occur (e.g., antimicrobials, drainage, other surgical management). For more information on safer injection practices, or to refer a patient to the syringe exchange, call the Health District at (509) 575.4040 (ext 541) or outside the area 1-(800) 535-5016 (ext 541). ***To make a referral for chemical dependency treatment, call Yakima County Assessment Services at (509) 574-2740, Monday through Friday 8:30 AM to 5:00 PM.***

References:

1. Centers for Disease Control and Prevention. Tetanus among injecting-drug users---California, 1997. MMWR 1998;47:149--51.
2. CDC. Wound botulism---California, 1995. MMWR 1995;44:889--92.
3. CDC. Update: Clostridium novyi and Unexplained Illness Among Injecting-Drug Users --- Scotland, Ireland, and England, April--June 2000. MMWR 2000; 49: 24;543.
4. Murphy EL, DeVita D, et. al. Risk factors for skin and soft-tissue abscesses among injection drug users: a case-control study. Clin Infect Dis 2001 Jul 1;33(1):35-40.

Yakima Health District Bulletin

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Inside this issue:

Welcome to the inaugural edition of the Yakima Health District Bulletin. The objective of this publication is to provide clinicians with updates on issues of public health importance. It will be published approximately every other month. Disease trends, public health investigations, outbreaks, and updates on recommendations for disease prevention and control will constitute the typical content. Tabular summaries of communicable disease case reports will also be a regular feature of the Bulletin. In this month's Bulletin, we report on a cluster of fatal soft tissue infections in drug injectors and begin a series of articles that will address preparedness for responding to deployment of biological, chemical, or radioactive weapons. We welcome your suggestions for future editions and look forward to this Bulletin's contribution toward supporting our shared role in protecting the health of Yakima County.

Public Health Websites

Centers for Disease Control
www.cdc.gov

Wa State Dept of Health
http://www.doh.wa.gov/

Environmental Health - DOH
http://www.doh.wa.gov/ehp/default.htm

Immunizations
http://www.doh.wa.gov/cfh/immunize

Rabies Guide for Practitioners
http://healthlinks.washington.edu/nwcphp/rabies/

Bioterrorism Websites

CDC Bioterrorism
www.bt.cdc.gov

Army Chemical Casualty Care
http://ccc.apgea.army.mil/

Johns Hopkins Biodenfense
www.hopkins-biodefense.org

Wa StateDept of Health
http://www.doh.wa.gov/bioterr/default.htm

Fatal Soft Tissue Infections Among Drug Injectors

From October 29, 2001 through January 28, 2002 six septic deaths associated with necrotizing fasciitis have occurred among drug injectors in Yakima County. Another case with the same syndrome has survived. The median age of the seven total cases was 46 years (range: 37-57). Five were male. Six of seven reported a history of injecting black tar heroin. Of the three whose route of injection was reported, all were subcutaneous injectors (also known as "skin poppers"). Group A streptococcus was isolated from the one patient whose drug of choice was not reported. Among the black tar heroin users, Clostridium sordelii was isolated from one patient and Clostridium spp. (not further typed) from two others. Skin contaminants (e.g., coagulase negative staphylococci, alpha streptococci) or no organisms were isolated from the remainder. Subcutaneous gas on CT scan was seen in all three patients from whom Clostridia were isolated and from one additional patient. One died at a local hospital, and the remaining six were transferred to Harborview Medical Center where they underwent from one to five surgical debridement procedures and intensive care. Death occurred within two days of transfer for all but two cases. Of the remaining two, one died at 17 days post-transfer; the other has survived and is recovering. The isolation of Clostridia combined with the absence of methamphetamine or cocaine injectors in this cluster, suggests that Clostridium spore contamination of black tar heroin is the cause of many, if not most, of the cases.

Black tar heroin is dark and gummy. The drug is believed to be processed in facilities close to the source of opium poppies grown in several states in Mexico. The final product often contains adulterants (e.g., soil, feces) as well as diluents (e.g., sugar) to increase bulk. The use of black tar heroin is believed to be increasing and, since 1993, has supplanted traditional (powdered) forms of heroin in western states (1). Previous reports of tetanus and soft tissue infections among users of black tar heroin have been associated with Clostridia. Botulism, tetanus, gas gangrene, and necrotizing fasciitis have all been reported (1-3). Heating the heroin/liquid mix-

Biological Agents of Terrorism and Warfare

The recent bioterrorism attack utilizing anthrax spores disseminated through the United States Postal Service serves as a painful awakening to the fact that deployment of biological, chemical or radioactive weapons has now moved beyond the realm of theoretical concern to a real and ongoing threat. As health care professionals, we may not be able to prevent deployment of such agents, but we can try to be reasonably well prepared to respond. Not only does our vigilance and preparedness increase the probability of prompt recognition and appropriate management of victims and other exposed persons, but also it may serve as a deterrent to deployment. Toward that end, the following table provides a brief review of the leading biological candidates for use in terror or warfare, their clinical presentation, and initial medical management. Infectious disease and public health consultation should be considered early in the management of suspected cases.

Syndromic Surveillance

In addition to the specific agents listed below, health care providers should be vigilant for and diligent about immediately reporting to Yakima Health District the following:

- Severe or fatal febrile respiratory illness in otherwise healthy persons
- Illness that is unusual for a given population (e.g., varicella rash in adults)
- Multiple occurrences of unusual illness (e.g., encephalitis, hemorrhagic fever, renal disease)
- Large numbers of persons with any similar disease or syndrome
- Increase in unexplained illnesses or deaths
- Multiple ill persons seeking care simultaneously

Most Likely Agents

Of biological agents potentially useful for deliberate deployment, six are deemed most likely to be used in an attack: anthrax, smallpox, plague, botulism, tularemia, and Q-fever. Viral hemorrhagic fevers and encephalitides are also possible agents, but they may be more difficult to deploy.

References

Medical Management of Biological Casualties Handbook. Fourth edition, 2001: United States Army Research Institute for Infectious Diseases, 2001.

Textbook of Military Medicine: Medical Aspects of Chemical and Biological Weapons. Office of the Army Surgeon General, 2001.

Agent (disease)	Typical Syndrome	Initial Management Points
Bacillus anthracis **(anthrax)**	Inhalational - Fever, sweats, myalgias; mediastinitis, occasionally with infiltrate or effusion; sepsis and/or meningitis in severe cases Cutaneous - Compatible cutaneous lesion: edematous papule, then vesicle/pustule, then ulcer with central necrotic eschar Gastrointestinal (not reported in recent attack) - Severe febrile gastroenteritis followed by sepsis	• Standard precautions • Parenteral ciprofloxacin or doxycycline plus two additional antimicrobials* for inhalational or systemic cases; oral monotherapy for most uncomplicated cutaneous cases. • Collect serum**, sputum & blood cultures, and CSF**
Variola (smallpox)	Vesicular rash with history of prodromal fever and prostration	• Airborne, droplet and contact precautions • Supportive therapy • Collect serum • Identify close contacts
Yersinia pestis **plague)**	Bloody sputum and fever with prostration	• Droplet precautions • Collect sputum & blood cultures and serum** • Gentamycin 2mg/kg iv or streptomycin 10 mg/kg iv • Identify close contacts
Clostridium botulinum **toxins A-F (botulism)**	Flaccid paralysis	• Standard precautions • Supportive care • Contact public health for access to anti-toxin • Respiratory secretions, stool and serum** for toxin detection • Rule out other neurologic conditions
Francisella tularensis **(tularemia)**	• Febrile respiratory illness (“plague minor”) • Tularemic patients may also have skin lesions, lymphadenopathy, pharyngeal, or ocular involvement.	• Standard precautions • Collect blood cultures, serum**, nasal swabs and sputum • Gentamycin 2mg/kg iv or streptomycin 10 mg/kg iv
Coxiella burnetti **(Q fever)**	Fever, cough, and pleuritic chest pain	• Standard precautions • Collect wound cultures and serum • Doxycycline 100 mg iv
Viral hemorrhagic fevers and encephalitides	Systemic febrile illnesses with hemorrhagic manifestations, renal failure and/or neurologic abnormalities	• Contact and droplet precautions (VHF only) • Supportive care • Collect serum** and CSF**

*e.g., one or more of the following: rifampin, clindamycin, clarithromycin, chloramphenicol, penicillins
**Save additional serum (in red and tiger top tubes) and CSF for supplementary testing

Reported Conditions Summary Yakima County, 1999-2001

Condition	Year		
	2001	2000	1999
Campylobacteriosis	134	115	170
Cryptosporidiosis	10		
E. coli O157:H7	7	6	4
Giardiasis	48	54	48
Salmonellosis	31	61	65
Shigellosis	26	157	43
Hepatitis A	17	20	8
Hepatitis B acute	3	5	6
Hepatitis B chronic	41	--	--
Hepatitis C acute	3	5	1
Hepatitis C chronic	239	--	--
Meningococcal	2	9	7
Pertussis	2	27	29
Tuberculosis	15	10	9
HIV New	9 (AIDS) 9 (HIV) 18 (Total)	12 (AIDS) 20 (HIV) 32 (Total)	3 (AIDS) 0 (HIV) 3 (Total)
HIV Deaths	2	4	4
HIV Cumulative Living	69 (AIDS) 36 (HIV) 105 (Total)	62 (AIDS) 36 (HIV) 98 (Total)	53 (AIDS)
Chlamydia	875	808	668
Genital Herpes—Initial	121	113	89
Gonorrhea	74	92	55
Primary and Secondary Syphilis	4	3	1

Asymptomatic HIV infection became reportable in 1999.
Chronic hepatitis B and chronic hepatitis C infection became reportable in 2000.