



To: CAHAN San Diego Participants

Date: December 4, 2019

From: Public Health Services, Epidemiology and Immunizations Services Branch

Health Advisory: Severe Myonecrosis and Wound Botulism Associated with Black Tar Heroin

This advisory informs providers about nine cases of severe myonecrosis associated with black tar heroin (BTH) use in San Diego County in the last two months. Furthermore, a confirmed wound botulism case associated with BTH use was also recently reported in the county. Recommendations on management are provided below.

Situation

Between October 2 and November 24, 2019, nine persons who injected BTH were admitted to hospitals in San Diego County with severe myonecrosis; seven (78%) have died. The patients ranged in age from 19 to 57 years (median 42) and five (56%) were male. Five patients were known social contacts and five were homeless. Seven patients had infections that involved extremities, and two had infections that involved the buttocks. Wound cultures were performed on seven of nine patients; four had no growth. Cultures from one patient grew an unspecified *Clostridium* species, from another patient grew *C. sordellii* and *C. tertium*, and from a third patient grew an unspecified *Clostridium* species, *Staphylococcus epidermidis* and a *Bacillus* species. Blood cultures on all patients had no growth.

In addition, one confirmed case of wound botulism associated with BTH use was reported in San Diego County in October; the first confirmed case in the county this year. Since September 1, 2019, thirteen probable and confirmed wound botulism cases, mostly among BTH users, have been reported in Southern California. Los Angeles County has [reported](#) four wound botulism cases in BTH users since October 13.

In San Diego County, the sources of BTH used by the reported myonecrosis cases remain under investigation by local law enforcement. It is possible that additional cases of BTH-associated myonecrosis and wound botulism may occur.

Background

Soft tissue infections are a leading cause of morbidity and mortality among injection drug users. Various organisms have been associated with necrotizing infections associated with injection drug use including *Streptococcus pyogenes*, *Staphylococcus aureus*, and clostridial species, such as *C. perfringens*, *C. septicum*, and *C. sordellii*.

Clostridial bacteria are anaerobic, gram-positive organisms that are found in the soil and occasionally in the gastrointestinal tract of humans or animals. Clostridial myonecrosis progresses rapidly, and death may occur in as little as twelve hours after onset of soft tissue infection. Clostridial soft tissue infections typically present with the rapid onset of severe pain in the affected area, often out of proportion to initial clinical examination. Any wound that is present may drain a foul-smelling, thin serosanguinous fluid. Woody induration of nearby tissue with associated tissue crepitus (gas formation) may be present. Shock may progress rapidly; once a patient manifests shock, mortality can exceed 50%. Treatment requires emergent surgical debridement and broad-spectrum antibiotics.

Clostridial species may be difficult to grow and isolate in culture, thus cultures negative for clostridial species should not be relied on to rule out infection. Bacteremia typically occurs late and portends poor outcomes with significant mortality. It is important to get wound cultures, ideally from the operating room and under sterile conditions.

Botulism is a potentially fatal neurologic illness caused by the neurotoxin produced by *C. botulinum* and rarely by other clostridial species. It is characterized by a bilateral, descending flaccid paralysis with cranial nerve involvement. Prompt clinical diagnosis of botulism is imperative, as is timely administration of Botulism Antitoxin Heptavalent (BAT®) released by the California Department of Public Health (CDPH). More information about botulism and guidance for clinicians are available on the Centers for Disease Control and Prevention (CDC) [botulism website](#).

Recommendations for Healthcare Providers

- Be alert for severe soft tissue infections and wound botulism in BTH users.
- Report suspect cases to the Epidemiology Program at 619-692-8499 (Monday through Friday 8 AM to 5 PM) or after hours and County-observed holidays at 858-565-5255 (ask for the Epidemiology duty officer).
 - Suspected botulism is immediately reportable by telephone per Title 17 California Code of Regulations, Section 2500.
 - Necrotizing fasciitis and *C. sordellii* are locally reportable conditions in San Diego County and should be reported within one working day.
- For patients who may have myonecrosis or necrotizing fasciitis:
 - Prompt broad-spectrum antibiotic administration and surgical consultation for debridement are associated with improved outcomes.
 - Wound cultures taken during debridement can assist with determining the etiology of infection.
- For patients who may have wound botulism:
 - Consider prompt neurology, infectious disease, and surgical consultation as indicated.
 - Contact the County Epidemiology Program immediately to arrange treatment with BAT®.
 - Follow the checklist attached to this advisory.
- For all patients who inject drugs, particularly BTH:
 - Educate about the symptoms of severe soft tissue infections and wound botulism. Instruct individuals to go to the nearest emergency department should symptoms develop. A flyer for patient use is attached to this advisory.
 - Warn about the risk of myonecrosis, wound botulism and other potentially life-threatening infections and conditions associated with drug use.
 - Inform about risk reduction strategies available [here](#) and [here](#). Cooking or heating will not kill *C. botulinum* spores that may contaminate drugs; however, proper hygiene can decrease risk for other skin and soft tissue infections.
 - Consider initiating medication assisted treatment (MAT) for patients with opioid use disorders. More information about MAT can be found [here](#).
 - Refer patients with opioid use disorders to substance use disorder treatment programs that offer MAT, such as opioid treatment programs. More information can be found [here](#).
 - Consider prescribing naloxone to opioid-dependent patients and their families and friends to reduce the risk of overdose death. More information about naloxone may be found [here](#).
 - Ensure tetanus boosters are given every five years due to the increased risk for tetanus.
 - Ensure immunizations are up to date for hepatitis A and B, and screen patients for hepatitis C and HIV.

CAHAN San Diego

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CHECKLIST: DIAGNOSIS AND MANAGEMENT OF WOUND BOTULISM

Diagnosis

- Establish the presence of signs and symptoms consistent with the descending paralysis of botulism. *Did the symptoms begin with cranial nerve palsies (ptosis, diplopia, dysarthria) and progress distally?*
- If the diagnosis is in doubt, consider an infectious diseases consult, a neurology consult, and/or EMG testing which should show augmentation of muscle action potential at 20-50 Hz.
- Determine if the patient has risk factors for wound botulism. *Is the patient an injecting drug user, especially a person who skin-pops black tar heroin?*
- Look for infected wound(s). Some patients with wound botulism may not have an obvious site of infection.

Obtaining antitoxin

- Call the County of San Diego Epidemiology Program at 619-619-8499 (after hours 858-565-5255).
- Receive call from the California Department of Public Health (CDPH) Division of Communicable Disease Control Duty Officer (DCDC DOD) who will discuss the case and release of antitoxin. (Note: the state's DCDC DOD should not be contacted directly from the hospital initially.)
- Alert the hospital pharmacy that antitoxin is being released from the Los Angeles Quarantine Station.
- Arrange for the transport of antitoxin (the admitting hospital is responsible for transport).

Required pre-antitoxin administration laboratory testing

- Draw 30 cc's of whole blood into red top tubes (this will take more than one tube).
- Label each tube with the patient's name, "pre-antitoxin serum," and the date and time of collection.
- Bundle the tubes.
- Indicate if the patient is taking any of the following interfering medications: neostigmine bromide, neostigmine methyl sulfate, pyridostigmine bromide, edrophonium chloride, ambenonium chloride.
- Send the tubes to the hospital laboratory with instructions to refrigerate and ship to the San Diego County Public Health Laboratory.

Antitoxin administration

- The antitoxin currently available for wound botulism is BAT® [Botulism Antitoxin Heptavalent (A, B, C, D, E, F, G) – (Equine)]. It is a mixture of immune globulin fragments indicated for the treatment of symptomatic botulism following documented or suspected exposure to botulinum neurotoxin serotypes A, B, C, D, E, F, or G in adults and pediatric patients. The most current information on BAT® can be found [here](#). The [package insert](#) which includes information on dosage and administration, and how to report adverse events is also included on this site.

Wound debridement

- Debride the patient's wound(s) if any. (CDPH recommends hanging antitoxin prior to wound debridement.)

Other considerations

- Treat with high-dose antibiotics effective against anaerobes.
- Vaccinate against tetanus if not up to date (every 5 years) and Hepatitis A and B.

Post antitoxin laboratory testing

This is no longer done routinely as the amount of antitoxin is generally much more than needed to neutralize the circulating toxin. If the patient does not respond to antitoxin or has an exacerbation of symptoms consider whether there may be an ongoing source of toxin such as an ongoing infection or abscess. Repeat toxin testing can be considered on a case by case basis.



WARNING: BLACK TAR HEROIN MAY BE CONTAMINATED



People in San Diego County who inject black tar heroin are getting
WOUND BOTULISM and **FLESH-EATING BACTERIA**.

UNDERSTAND YOUR RISK



**MUSCLING & SKIN-POPPING
ARE THE GREATEST RISK.**

But, shooting IV is risky too.



**CONDITIONS MAY BE DEADLY
IMMEDIATE TREATMENT IS
NECESSARY!**



**THERE IS NO WAY TO KNOW
IF BACTERIA ARE IN THE HEROIN.**



**INFECTIONS CAN BE SUDDEN
AND SPREAD FAST.**



**COOKING THE DOPE
DOES NOT KILL THE BACTERIA.**



**CUTS, SCRAPES, WOUNDS, &
PUS POCKETS INCREASE RISK.**

LOOK FOR SYMPTOMS

WOUND BOTULISM



**Weakness and
drooping eyelids**



**Blurred or
double vision**



**Extreme dry
mouth and
sore throat**



**Trouble breathing,
intense
shortness of breath**

FLESH-EATING BACTERIA



**Red, warm, or
swollen skin**



Blisters



**Flu-like
symptoms**



**Deep pain in
infected area**

If you have ANY of the symptoms, go to the nearest EMERGENCY ROOM immediately.

If you want or need treatment for a drug problem, call 1-888-724-7240.