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Information on *Vibrio Vulnificus*

Modeled on information from the Centers for Disease Control and Prevention (CDC); http://www.cdc.gov/health/diseases.htm

What is *Vibrio vulnificus*?

Vibrio vulnificus (Vv in short) is a bacterium in the same family as those that cause cholera. It normally lives in warm seawater and is part of a group of vibrios that require a salty environment. *Vibrio vulnificus* is NOT a contaminant; it occurs in seawater everywhere.

What type of illness does *V. vulnificus* cause?

V. vulnificus can cause disease in those who eat colonized seafood or have an open wound that is exposed to seawater. Among healthy people, the ingestion of Vv can cause vomiting, diarrhea, and abdominal pain. In immune-compromised persons, particularly those with chronic liver disease, Vv can infect the bloodstream, causing a severe and life-threatening illness characterized by fever and chills, decreased blood pressure (septic shock), and blistering skin lesions. *V. vulnificus* bloodstream infections are fatal about 50% of the time.

V. vulnificus can also cause an infection of the skin when open wounds are exposed to warm seawater; these infections may lead to skin breakdown and ulceration. *V. vulnificus* is often called a "flesh eating bacterium". Persons who are immuno-compromised are at higher risk for invasion of the organism into the bloodstream and potentially fatal complications.

How common is *V. vulnificus* infection?

V. vulnificus is a rare cause of disease, but it is also underreported. There are about 10 to 20 cases per year in Louisiana; the CDC estimates that Vv causes about 205 infections in the U.S. each year. Most cases have wound infections (60%), septicemia (30%) and gastro-enteritis (10%). The majority get the infection from skin contact with seawater (80%) or consumption of raw seafood (20%)

How do people get infected with *V. vulnificus*?

Persons who are immuno-compromised, especially those with chronic liver disease, are at risk for Vv when they come in contact with seawater or when they eat raw seafood, particularly oysters. A recent study showed that people with these pre-existing medical conditions were 80 times more likely to develop *V. vulnificus* bloodstream infections than were healthy people. The bacterium is frequently isolated from oysters and other shellfish in warm coastal waters during the summer months. Since it is naturally found in warm marine waters, people with open wounds can be exposed to Vv through direct contact with seawater. There is no evidence for person-to-person transmission of Vv.

How can *V. vulnificus* infection be diagnosed?

V. vulnificus infection is diagnosed by routine stool, wound, or blood cultures; the laboratory should be notified when this infection is suspected by the physician, since a special growth medium can be used to increase the diagnostic yield. Doctors should have a high suspicion for this organism when patients present with gastro-intestinal illness, fever, or shock following the ingestion of raw seafood, especially oysters, or with a wound infection after exposure to seawater.

How is *V. vulnificus* infection treated?

V. vulnificus infection is treated with antibiotics. A third-generation cephalosporin (e.g., ceftazidime) plus doxycycline or ciprofloxacin is appropriate.

Are there long-term consequences of *V. vulnificus* infection?

V. vulnificus infection is an acute illness, and those who recover should not expect any long-term consequences. Infection in high-risk individuals, however, has a 50% case fatality rate. Wound infections often develop into necrosis that frequently requires skin grafting or limb amputation.

What can be done to improve the safety of oysters?

Although oysters can be harvested legally only from waters free from fecal contamination, even legally harvested oysters can be contaminated with *V. vulnificus* because the bacterium is naturally present in marine environments. *V. vulnificus* does not alter the appearance, taste, or odor of oysters. When notified rapidly about cases, state officials traceback shellfish to discover possible sources of infection and to close oyster beds when problems are identified.

How can I learn more about *V. vulnificus*?

You can discuss your medical concerns with your doctor or other health care provider. Your Parish Health Unit can provide information about this and other public health problems that are occurring in your area. Information about the potential dangers of raw

oyster consumption is available 24 hours a day from the FDA's Seafood Hotline (telephone 1-800-332-4010).

Information is also available on the world wide web at: http://www.fda.gov or http://www.cdc.gov/health/diseases.htm

Some tips for preventing Vv infections, particularly among immunocompromised patients, including those with underlying liver disease:

- MOST IMPORTANT: If you have one the conditions mentioned above, if your doctor told you about the risk caused by Vv, **avoid exposure of open wounds or broken skin to warm salt or brackish water, or to raw shellfish harvested from such waters.**
- Take care of any wound (cuts, punctures, abrasions) that has been in contact with sea or brackish water. Apply immediately a disinfectant (tincture of iodine for example) or antibiotic ointment. If the wound does not heal in the next day, get medical care.
- Understand that eating raw oysters or other raw shellfish carry a risk of severe disease.
- To avoid any risk: Cook shellfish (oysters, clams, mussels) thoroughly.
- For shellfish in the shell, either a) boil until the shells open and continue boiling for five more minutes, or b) steam until the shells open and then continue cooking for nine more minutes. Do not eat those shellfish that do not open during cooking. Boil shucked oysters at least three minutes, or fry them in oil at least three minutes at 375°F.
- Avoid cross-contamination of cooked seafood and other foods with raw seafood and juices from raw seafood.
- Eat shellfish promptly after cooking and refrigerate leftovers.
- Wear protective clothing (e.g., gloves, boots) when in contact with seawater or handling raw shellfish.