Vibrio vulnificus
Vibrio vulnificus

- causes wound infections, gastroenteritis, or a syndrome known as primary septicemia
- septicemia occurs in the immunocompromised and those with chronic liver disease, chronic alcoholism, and hemochromatosis
- most common agent of serious infections caused by the genus Vibrio in the United States
- incidence is 0.5 cases per 100,000 population in coastal areas
  - 2/3 of cases are primary septicemia
- cases have been reported in many areas of the world
  - Israel, Japan, China, Spain, and Turkey

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The Organism

- gram-negative
- motile
- curved, rod shaped
- lactose-fermenting
- halophilic
  - requires a salt-rich environment
- opportunistic pathogen
Reservoir/Sources

- free living element of flora of estuarine environments
- ubiquitous in the coastal waters of the United States
- commonly associated with shellfish
  - routinely isolated from oysters during warm summer months
Mode of Transmission

- immunocompetent normal hosts
  - contaminating an open wound with sea water harboring the organism
  - lacerating part of the body on coral, fish, etc., followed by contamination with the organism
    - recreational - boating accidents
    - occupational - oyster shuckers and fishermen
  - infectious dose unknown

- high risk populations
  - ingestion of raw or undercooked seafood, especially shellfish such as oysters
  - infection can presumably occur with doses of less than 100 total organisms

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Signs and Symptoms

- Immunocompetent normal hosts
  - Gastroenteritis
    - Abdominal pain
    - Fever
    - Vomiting and diarrhea

- High risk populations
  - Primary septicemia
    - Mortality rate is greater than 50%
    - Over 70% have distinctive bullous skin lesions
Incubation Period

- usually 12 – 72 hours after eating raw or undercooked seafood
Diagnosis and Treatment

- diagnosis is obtained by culturing of the organism from wounds, diarrheic stools, or blood
- antibiotics are necessary for treatment of *Vibrio vulnificus* infections
- necrotic tissue should be debrided
  - severe cases may require fasciotomy or limb amputation
Prevention

- do not eat raw oysters or other raw shellfish
- avoid cross contamination of cooked seafood and other foods with raw seafood and juices from raw seafood
- cook shellfish thoroughly
  - for shellfish in the shell, do not eat those that do not open during cooking
  - eat shellfish promptly after cooking
- avoid exposure of open wounds or broken skin to warm salt or brackish water, or to raw shellfish harvested from such waters
- wear protective clothing (e.g. gloves) when handling raw shellfish

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