

Current Topics

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Typhoid Fever



Typhoid Fever

- Bacterial infection with *Salmonella typhi*
- Typical Symptoms include fever, headache, abdominal pain, anorexia, splenomegaly, rarely intestinal hemorrhage, altered mental status
- Case fatality rate of 10-20% without antibiotics
- Falls to 1% if antibiotics administered promptly
- Exposure usually occurs from consumption of contaminated food or water
- Incubation varies from 3-60 days, usually 8-14 days
- Some cases will continue to carry and shed bacteria potentially for life



Typhoid Fever

- Received call from local hospital that detainee in US Marshal's custody was admitted through ED with fever, abdominal pain, vomiting
- 30 yr old male, recently picked up in southern AZ desert
- Preliminary positive blood culture for *Salmonella typhi*, forwarded to state lab



Typhoid

- Investigation revealed that patient had left home in Honduras July 5th
- Went through Guatemala and into Mexico
- Took bus from southern Mexico to Nogales
- Patient believed he crossed border into USA on or about July 8th
- Fever, abdominal pain began while walking in desert on July 10th
- Admitted to hospital after apprehension on July 21st



Typhoid



- Patient was drinking and bathing in stream water in desert in the USA
- Ate food with group while in desert, no others sick
- While traveling through Mexico and Guatemala could not recall exact foods but bought food from vendors
- Before leaving ate meals with family in Honduras



Typhoid

- *Salmonella typhi* confirmed at state lab
- Notified ADHS of suspected typhoid activity with exposure likely in Honduras
- Information forwarded to CDC for typhoid surveillance



Botulism



Botulism

- *Clostridium botulinum* produces botulinum toxin in anaerobic environments
- *C. botulinum* is a common bacteria found in soil worldwide
- LD50 of 1 ng/kg, one of the most lethal toxins known
- Four types of naturally occurring botulism
 - Foodborne
 - Infant
 - Wound
 - Adult intestinal



Botulism

- Symptoms start a few hours to several days after exposure
- Early symptoms include fatigue, weakness, blurred vision, dry mouth, difficulty swallowing
- Symptoms then descend down the body resulting in symmetric, flaccid, descending paralysis and death
- Antitoxin is available through CDC and will stop progression of disease
- Recovery may take months
- Outbreaks have been linked to home canned foods, baked potatoes, fermented or smoked fish, contaminated heroin, improperly used botox



Botulism

- Received notification from ADHS that four patients at a hospital in Phoenix were being evaluated for suspected botulism
- Patients exhibiting worsening muscle weakness, facial numbness, difficulty swallowing, one patient being intubated for breathing support
- All four patients admitted from the same correctional facility
- All four were housed in the same pod at facility in maximum security
- Two moderately affected, two severely affected



Botulism

- Investigation involved interviews of three cases, correctional staff
- Two moderate cases were cellmates immediately below the more severe cases who each had individual cells
- All four were known to share food and items
- Patients admitted that the most severely affected case had made “pruno” or prison wine (a known risk factor) and the four drank it immediately prior to symptom onset
- They disposed of all wine, ingredients, and items used to make it due to fear of getting caught



Botulism

- CDC released botulinum antitoxin for all four after discussing patients with treating physician
- Two moderate cases recovered quickly and discharged
- One case remained admitted for another week
- One case remains on mechanical ventilation, trached two months ago
- Specimens from two severe cases tested positive for botulinum type A at CDC



Questions?



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Case Study

- 33 yr old male presented to local hospital ED
 - 10 day history of recurrent fever, chills, diaphoresis - 102F on admission
 - 3 day history of burning and severe pain in left lumbar area radiating down to foot
 - Loss of appetite
 - MRI of lower spine and pelvis normal
 - Blood work including WBC normal, except AST 177, ALT 252, platelets 106,000
 - Discharged home from ED



Case Study

- Initial blood cultures grew bacteria identified as gram (+) cocci
- Patient called and came back to ED
 - Placed on vancomycin, rocephin
- Preliminary culture growth identified as suspected *Brucella*
- Treatment changed to doxycycline, streptomycin
- Culture confirmed at Arizona State Lab as *Brucella melitensis*
- Multiple lab workers at clinical lab prophylaxed for *Brucella* exposure



Brucellosis

- Various *Brucella* species affect sheep, goats, cattle, deer, pigs, dogs, other animals
- Humans become infected by animals or animal products contaminated with the bacteria
- Consumption of unpasteurized milk products from affected animals most common route of infection
- More rarely through aerosolized bacteria or through skin wounds



Brucellosis

- Uncommon in USA, more common in countries without strong domestic animal health programs
- Incubation usually between 1-2 months, occasionally several months
- Symptoms include fever, sweats, headache, malaise, myalgia, back pain
- Can cause chronic symptoms including recurrent fevers, arthritis, orchitis, fatigue
- Severe infections can affect CNS or heart



Case Study



■ Source investigation

- ❑ Patient Spanish speaking only, lived in USA for 16 years
- ❑ Parents live in Mexico, patient had gone for month long visit recently by himself
- ❑ Consumed unlabeled goat cheese bought from street vendor approximately 2 months before onset of illness on his way back to USA

