

Please read this section first

The HPCSA and the Med Tech Society have confirmed that this clinical case study, plus your routine review of your EQA reports from Thistle QA, should be documented as a “Journal Club” activity. This means that you must record those attending for CEU purposes. Thistle will **not** issue a certificate to cover these activities, nor send out “correct” answers to the CEU questions at the end of this case study.

The Thistle QA CEU No is: **MT-18/063**

Each attendee should claim **ONE** CEU points for completing this Quality Control Journal Club exercise, and retain a copy of the relevant Thistle QA Participation Certificate as proof of registration on a Thistle QA EQA.

MICROBIOLOGY LEGEND

CYCLE 44 ORGANISM 3

Yersinia enterocolitica

Yersinia enterocolitica is a Gram-negative bacillus-shaped bacterium, belonging to the family Enterobacteriaceae. It is motile at temperatures of 22–29°C, but becomes non-motile at normal human body temperature. *Y. enterocolitica* infection causes the disease yersiniosis, which is an animal-borne disease occurring in humans, as well as in a wide array of animals such as cattle, deer, pigs, and birds. Many of these animals recover from the disease and become carriers; these are potential sources of contagion despite showing no signs of disease. The bacterium infects the host by sticking to its cells using trimeric autotransporter adhesins.

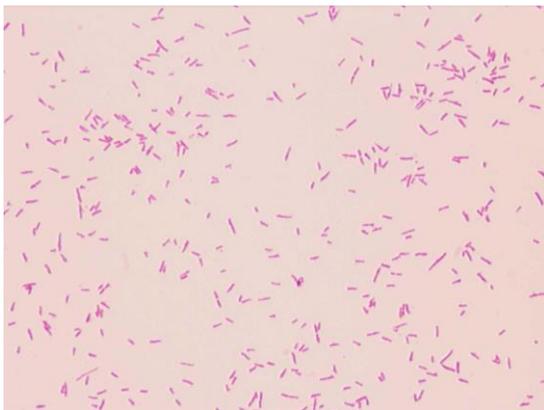


Figure 1: Gram negative bacilli *Yersinia enterocolitica*

Signs and symptoms

Symptoms vary with age and are commonest in young children.

They include:

- Fever.

- Diarrhoea, often bloody in young children.
- Abdominal pain and cramps.
- Symptoms similar to appendicitis in older children and adults.
- Joint pain occurs in half of affected adults.

Diagnosis

There are numerous tests that can be conducted to diagnose a *Yersinia enterocolitica* infection. A stool culture is the best way to confirm the presence of the pathogen, but can take two weeks after the onset of the disease for the culture result to come back positive or negative.



Figure 2: *Yersinia enterocolitica* on blood agar.

Other tests include :

- Tube agglutination
- Enzyme-linked immunosorbent assays,
- Radioimmunoassays,
- Ultrasonography or computed tomography scanning imaging studies,
- Colonoscopy, and
- Joint aspiration in certain cases

Treatment

Infections by *Yersinia enterocolitica* are usually self-limiting and will resolve on their own in most patients who recover without any antibiotic treatment within a seven days to three weeks period. Hydration is important in uncomplicated cases of diarrhea caused by the organism and will be sufficient treatment in the infection, however in severe or more complicated cases of infection antibiotic treatment may be necessary. The antibiotics commonly used are aminoglycosides, doxycycline, trimethoprim-sulfamethoxazole, or fluoroquinolones.

Prevention

- Exclude people with Yersinia infection from childcare, preschool, school and work until there has been no diarrhoea for 24 hours. If working as a food handler in a food business, the exclusion period should be until there has been no diarrhoea or vomiting for 48 hours.
- Infants, children and adults with Yersinia infection should not swim until there has been no diarrhoea for 24 hours.
- Cook all meat thoroughly.
- Good food handling procedures should be followed.
- Follow good hand washing and keeping areas clean procedures.
- Wash hands after contact with farm animals, pets, animal faeces or animal environment.
- Do not drink unpasteurised milk.
- Anyone with diarrhoea should avoid swimming in pools.
- When faecal accidents occur, swimming pools should be properly disinfected.

Prognosis

Yersiniosis is usually either self-limited or is responsive to therapy; however, reinfection is possible. Most patients with *Y. enterocolitica* infection are symptomatic; however, asymptomatic carriage may occur. Death is uncommon, but patients with significant comorbidities are at risk for *Y. enterocolitica* bacteremia, which carries a case fatality rate of 34-50%.

References

1. http://en.wikipedia.org/wiki/Yersinia_enterocolitica
2. <http://emedicine.medscape.com/article/232343>
3. www.sahealth.sa.gov.au/...treatment/.../yersinia

Questions

1. Discuss the morphology and metabolism of *Y. enterocolitica*.
2. Discuss the role of *Y. enterocolitica* in disease.
3. Discuss the lab diagnosis of *Y. enterocolitica*.