



YERSINIOSIS

1. **Agent:** *Yersinia enterocolitica* and *Yersinia pseudotuberculosis* are gram-negative bacilli

2. **Identification:**

a. **Symptoms:** Acute febrile diarrhea (especially in young children), enterocolitis, acute mesenteric lymphadenitis mimicking appendicitis (especially in older children and adults), complicated in some cases by erythema nodosum (in about 10% of adults, particularly women), post-infectious arthritis and systemic infection.

Y. enterocolitica infections present more commonly with a gastroenterocolitis syndrome: bloody diarrhea is seen in 10%-30% of *Y. enterocolitica*-infected children; joint pain is reported in half of infected adults.

Y. pseudotuberculosis presents with fever, rash and abdominal pain.

b. **Differential Diagnosis:** Other bacterial causes of gastroenteritis or sepsis. Post-infectious arthritis is seen with bacterial chlamydial infection. Since 20% of infections in older children and adolescents can mimic acute appendicitis, outbreaks can be recognized by local increases in appendectomies.

c. **Diagnosis:** Isolation of organism from stool or blood culture. Serologic tests.

3. **Incubation period:** Usually 3-7 days, range 1-14.

4. **Reservoir:** Animals are the principal reservoir for *Yersinia*. The pig is the principal reservoir for pathogenic *Y. enterocolitica*; asymptomatic pharyngeal carriage is common in swine, especially in the winter. *Y. pseudotuberculosis* is widespread among many species, and particularly among rodents.

5. **Source:** Worldwide. *Y. pseudotuberculosis* is primarily a zoonotic disease of wild and domesticated birds and mammals, with humans as incidental host. *Y. enterocolitica* has been recovered from a wide variety of

animals without signs of disease. The most important source of infection may be pork, as the pharynx of pigs may be heavily colonized by *Y. enterocolitica*. Human cases have been reported in association with disease in household pets, particularly sick puppies and kittens.

Vehicles implicated in outbreaks attributed to *Y. enterocolitica* have included chocolate milk, soybean cake (tofu) and pork chitterlings. Studies in Europe suggest that many cases are related to ingestion of raw or undercooked pork.

6. **Transmission:** Fecal-oral transmission takes place by eating and drinking contaminated food and water or by contact with infected people or animals.

Transmission by transfusion of stored blood from donors who were asymptomatic or had mild GI illness may occur.

7. **Communicability:** Secondary transmission appears to be rare. There is fecal shedding at least as long as symptoms exist, usually for 2-3 weeks. Untreated cases may excrete the organism for 2-3 months. Prolonged asymptomatic carriage has been reported in both children and adults.

8. **Specific Treatment:** Therapy may be helpful for GI symptoms; definitely indicated for septicemia and other invasive disease.

Agents of choice against *Y. enterocolitica* are the aminoglycosides (for septicemia only) and trimethoprim/sulfamethoxazole. Quinolones such as ciprofloxacin are also effective. Both *Y. enterocolitica* and *Y. pseudotuberculosis* are usually sensitive to the tetracyclines, but not to penicillins.

9. **Immunity:** Unknown

REPORTING PROCEDURES:

1. Report cases within 1 day. *California Code of Regulations*, Title 17, Section 2500. Any group of cases of acute febrile gastroenteritis or cases suggestive of appendicitis should be reported at once to the local health authority,



even in the absence of specific identification of the etiology.

2. **Report Form:** [LAC DHS YERSINIOSIS and CONTACT ROSTER \(acd-yersin\)](#)

3. **Epidemiologic Data:**

- a. Source of food (especially meats), milk and water during incubation period
- b. Exposure to others with febrile illness in or outside the household
- c. Attendance at group gatherings where food was served and restaurants or commercial food establishments during incubation period
- d. Travel history
- e. Sensitive occupation or situation
- f. Possible exposure to sewage contaminated water
- g. History of blood transfusion

CONTROL OF CASE, CONTACTS & CARRIERS:

Public Health Nursing Home Visit Protocol:
Home visit as necessary – a face to face interview is conducted as necessary.

Refer to “Public Health Nursing Home Visit AS NECESSARY (HVAN) Algorithm” (B-73 Part IV Public Health Nursing Home Visit Protocol).

Contact within 24 hours to determine if SOS involved, otherwise no routine investigation.

CASE:

- 1. **Isolation:** Blood and enteric precautions until clinical recovery.
- 2. Remove those with diarrhea from food handling, patient care and occupations involving care of young children. May return to work after treatment, without clearance specimens.
- 3. **Quarantine:** None.

- 4. Investigate general sanitation and search for common-source vehicle; attention to close contacts with animals, especially pet dogs, cats and other domestic animals.

CONTACTS:

- 1. **Symptomatic:** Remove from work as for case. Confirm diagnosis.
- 2. **Asymptomatic:** Investigation of contacts and source of infection: Search for unrecognized cases and convalescent carriers among contact indicated only when a common-source exposure is suspected.

PREVENTION-EDUCATION:

- 1. Wash hands prior to food handling and eating, after handling raw pork and after animal contact.
- 2. Prepare meat and other foods in a sanitary manner.
- 3. Avoid eating raw pork; irradiation of meat is effective.
- 4. Avoid unpasteurized milk.
- 5. Protect water supplies from animal and human feces; purify appropriately.
- 6. Control rodents and birds (for *Y. pseudotuberculosis*).
- 7. Dispose of human, dog and cat feces in a sanitary manner.
- 8. During the slaughtering of pigs, the head and neck should be removed from the body to avoid contaminating meat from the heavily colonized pharynx.

DIAGNOSTIC PROCEDURES:

Consult Public Health Laboratory.

1. **Culture**

Container: Enterics

Laboratory Form: Test Requisition Form H-3021

Examination Requested: Yersinia



Material: Feces. Follow instructions provided with container.

Storage: Maintain at room temperature. Protect from overheating.

2. Culture for Identification (CI)

Container: Enteric CI

Laboratory Form: Test Requisition Form H-3021

Material: Pure culture on appropriate medium.

Storage: Same as above.