Campylobacteriosis

Summary

Campylobacter infection causes acute gastroenteritis. Most infections are acquired by ingestion of undercooked chicken or pork, drinking unpasteurized milk, handling raw poultry, direct contact with fecal material of infected pets or farm animals, or drinking untreated water. Laboratory diagnosis is confirmed by stool culture. Antimicrobial treatment may shorten the duration of illness and reduce shedding of the organism, although most patients recover without treatment. Symptomatic cases should be excluded from food handling, and from direct care of infants, elderly, immunocompromised, and hospitalized or institutionalized patients. Disease can be prevented by proper food preparation, thoroughly cleaning surfaces in contact with raw poultry, and by using good hand hygiene practices (i.e., proper hand washing after using the toilet, changing diapers, and before and after handling food).

Agent

Most cases of campylobacteriosis in humans are caused by *Campylobacter jejuni*. Other species that can cause diarrheal illness in humans include *Campylobacter coli*, *Campylobacter fetus*, and *Campylobacter lari*.

Transmission

Reservoir:

- *Campylobacter* has been found in wild or domestic animals, primarily in poultry and cattle. Puppies, kittens, swine, sheep, rodents and birds may also harbor *Campylobacter*.

Mode of transmission:

- Infection is acquired through ingestion of *Campylobacter* bacteria in undercooked chicken or pork, contaminated food or water, unpasteurized milk, untreated water, handling raw poultry, or from direct contact with fecal material of infected pets, farm animals, or infected people (although person to person transmission of *C. jejuni* is uncommon). Chronic infection of poultry and other animals represents the primary source of infection.

Period of communicability:

- In humans, the period of communicability is throughout the course of infection and can range from several days to several weeks. Individuals not treated with antibiotics may excrete the organism for as long as 2-7 weeks.

Clinical Disease

Incubation period:

Usually 2-5 days, with a range of 1-10 days.

Illness:

The gastrointestinal illness is characterized by an acute onset of diarrhea, abdominal pain and cramping, nausea, vomiting, and fever. The abdominal pain can mimic appendicitis. Most patients recover in less than one week, even in the absence of antibiotic treatment. However, 20% may have prolonged illness or a relapse. Stool often demonstrates gross or occult blood

and the presence of white blood cells. Other less common syndromes associated with *Campylobacter* infection include Guillain-Barré syndrome, reactive arthritis, or Reiter's syndrome (a form of arthritis that affects the eyes, urethra, skin, and joints).

Laboratory Diagnosis

The diagnosis of *Campylobacter* gastroenteritis is established via a stool culture. Stool samples should be submitted in enteric pathogen transport media.

Culture Independent Diagnostic Testing (CIDT) is becoming a common method for diagnosis. Because this method is highly sensitive, a patient may test positive for multiple organisms, including *Campylobacter spp.*, and a reflex culture is required to confirm a diagnosis.

Treatment

Most patients with *Campylobacter* gastroenteritis will recover without treatment. However, antimicrobial therapy given early in the infection can eradicate the organism from the stool within 2-3 days, shorten the duration of illness, and prevent relapse. Antibiotics should be used in patients with high fever, grossly bloody stools, prolonged illness (>1 week), or immunocompromised status. Common antibiotics used include erythromycin, azithromycin, or a fluoroquinolone; the recommended duration of treatment is 3-5 days. Resistance to fluoroquinolones is common. Antimicrobial susceptibility testing can help guide appropriate therapy. Treatment decisions should be made in conjunction with the patient's health care provider.

Surveillance

Case Definition:

Laboratory criteria – Isolation of *Campylobacter* from a clinical specimen.

Confirmed – A case that is laboratory confirmed.

Probable – A case that is positive by CIDT methods without culture confirmation or a clinically compatible case that is epidemiologically linked to a confirmed case.

Reporting:

Report all probable or confirmed cases of *Campylobacter* to the Center for Health Protection (CHP) at 833-796-8773**.** Information needed includes: patient's name, age, sex, race, ethnicity, home address, home phone number, occupation, and health care provider.

Case Investigation:

Use the Foodborne Surveillance Investigation Form to complete your Investigation. Information should also be entered into NM-EDSS per established procedures.

Control Measures

Control measures for CIDT cases that tested positive for more than one condition should be prioritized as follows: Vibrio> STEC> Cryptosporidium> Salmonella> Shigella> Campylobacter> Cyclospora> Giardia.

For a summary of work and daycare exclusion criteria for all enteric pathogens see Appendix 8.

1. Case management
   1.1. Isolation:
      1.1.a Exclude **symptomatic** persons from food handling, and from direct care of infants, elderly, immunocompromised, and hospitalized or institutionalized patients. Antimicrobial treatment should be considered for these people. These people may be allowed to resume their usual duties when:
         - Diarrhea has resolved, and
         - Proper hygiene measures can be maintained (as assessed by a food sanitarian, trained environmentalist, or infection preventionist).
      1.1.b Exclusion of **asymptomatic** infected persons from food handling, and from direct care of infants, elderly, immunocompromised, and hospitalized or institutionalized patients may be indicated if their food handling or personal hygiene habits (as assessed by a food sanitarian, trained environmentalist, or infection preventionist) are inadequate to prevent transmission of enteric infection to others. They need not be excluded from work if proper hygiene measures are maintained.
      1.1.c For hospitalized patients, contact precautions should be used.
   1.2. Prophylaxis: Not applicable.
2. Contact management
   2.1. Isolation: None required.
   2.2. Prophylaxis: Not applicable.
3. Prevention
   3.1. Emphasize good hand hygiene practices (i.e., proper hand washing after toilet use, changing diapers, and before and after handling food, especially raw poultry). Thoroughly clean cutting boards and surfaces that have been in contact with raw poultry.
   3.2. General guidelines for preventing foodborne illness include:
      - Thoroughly cook raw food from animal sources.
      - Wash raw vegetables.
      - Avoid unpasteurized dairy products.
      - Avoid drinking untreated water.
      - Wash hands, knives, and cutting boards after handling uncooked foods.
   3.3. Immunization: Not applicable.

Management of *Campylobacter* in Child Care Centers

1. Outbreaks of *Campylobacter* infection in childcare centers are uncommon.
2. Management of isolated cases

2.1. When a case of *Campylobacter* occurs among a childcare center attendee, that child should be excluded until s/he is asymptomatic, and the stools are formed. Asymptomatic children may return to childcare without follow-up stool cultures.

2.2. Per childcare licensing regulations, a center should notify parents or guardians in writing of a case of *Campylobacter* in the facility (Subsection D of 8.16.2.20 NMAC). See Appendix 7 for a template of a notification letter.

2.3. When a case of *Campylobacter* occurs among a childcare center staff member, that person should be excluded from their work duties until they are asymptomatic as defined above.

2.4. A case of *Campylobacter* in a childcare facility should prompt the search for other cases among children and staff members of the facility, as well as household members or other close contacts of the index case. Stool cultures should be obtained on other symptomatic people.

2.5. The childcare center should review its infection control protocols with staff, and emphasize the following:

- Standard precautions should be followed. Strict hand washing routines for staff and children, and routines for handling fecal-contaminated materials, should be assured.
- Frequently mouthed objects should be cleaned and sanitized daily. Items should be washed with dishwashing detergent and water, then rinsed in freshly prepared (daily) household bleach solution (dilute 1 cup bleach in 9 cups of water).
- Food-handling and diaper changing areas should be physically separated and cleaned daily.
- Diaper changing surfaces should be nonporous and cleaned with a freshly prepared (daily) household bleach solution (dilute 1 cup bleach in 9 cups of water). Cleaning of diaper changing surfaces after each use is required; diapers should be disposed of properly. If available, nonporous gloves should be worn when changing diapers.
- Ideally, institute and maintain a system of stool monitoring (i.e., diaper logs) for all infants and children who are not toilet trained. Diaper logs are not required by regulation but are recommended whenever a day care attendee is diagnosed with an enteric pathogen. At a minimum, diaper logs should document the quality (e.g., formed, loose, watery, blood present, mucus present) and time of each diaper change. The log should be reviewed each day with the center director, or their designated personnel, and personnel from NMDOH who are being consulted and/or investigating individual cases, clusters, or outbreaks at the center. The purpose of the log is to assist in the identification of potential new cases, to prioritize testing recommendations, and assist in determining if exclusion of the infant or child is necessary until infection can be ruled out.
- Animals with diarrhea in a childcare center should be isolated from children and taken to a veterinarian for diagnosis and treatment.

For more information:

https://www.cdc.gov/campylobacter/

https://www.cdc.gov/campylobacter/prevention/index.html

References

American Academy of Pediatrics. In: Kimberlin, DW, et al eds. Red Book: 2021-2024 Report of the Committee on Infectious Diseases. 32nd ed. Itasca, IL: American Academy of Pediatrics; 2021.

Heymann, DL, ed. Control of Communicable Diseases Manual. 21th edition. Washington, DC: American Public Health Association; 2022.

See Campylobacteriosis Fact Sheets (English) (Spanish).