

Campylobacter Enteritis

Campylobacter enteritis or **campylobacteriosis** is a worldwide zoonosis manifesting as an acute diarrheal disease. The causative agent is the bacterium *Campylobacter jejuni*.

Infectious Agent

Infection is caused by gram-negative, spiral-shaped microaerophilic bacteria of the family *Campylobacteraceae*. Most infections are caused by *Campylobacter jejuni*; other species, including *C. coli*, also cause infection. *C. jejuni* and *C. coli* are carried normally in the intestinal tracts of many domestic and wild animals.

Epidemiology and pathogenesis

Campylobacter is a leading cause of bacterial diarrheal disease worldwide; within the United States, it is estimated to affect 2.4 million persons every year. It is also the most common bacterial diarrheal disease in the Czech Republic.

The pathogenic microbe is transmitted to humans directly from animals or indirectly from animal products and water. The most common route of infection is *alimentary*, ie. by ingesting contaminated unpasteurized milk and milk products, water and insufficiently heat-treated meat - mainly poultry and beef (steaks, steak tartare). Campylobacter penetrates the mucosa of the jejunum, ileum and duodenum and causes enterocolitis. If the microbe enters the bloodstream, a generalized disease develops. Virulence factors are invasion (protein and lipopolysaccharide antigen is anchored in campylobacter membranes) and adenylate cyclase activating enterotoxins.



Campylobacter jejuni

Mode of Transmission

It is transmitted to humans directly from animals or indirectly from animal products and water. The major modes of transmission include—

- Consuming contaminated foods, especially undercooked chicken and foods contaminated by raw chicken
- Consuming contaminated water or raw (unpasteurized) milk
- Contact with animals, particularly farm animals such as cattle and poultry, as well as cats and dogs.

Risk for Travelers

The infectious dose is thought to be small, typically fewer than 500 organisms. Campylobacteriosis is a common cause of travelers' diarrhea (TD). The percentage of bacteria-caused TD due to Campylobacter ranges from 1% to 2% in Mexico to 28% in Thailand.

The geographic distribution of cases is **worldwide**; risk for infection is higher in the developing world, especially in areas with poor restaurant hygiene and inadequate sanitation.

Clinical Presentation

Incubation period is typically 2-11 days.^[1] Than typical clinical signs appear - an increase in temperature and headache. After another 12-24 hours, colic-like abdominal pain occurs, often in the right lower quadrant (right hip syndrome) - appear as appendicitis, bloody diarrhea mixed with leukocytes and mucus and nausea. Most patients do not vomit. These symptoms usually last from two to six days. The main complication is dehydration. Reactive arthritis, Reiter's syndrome or erythema nodosum may develop on an immunopathological basis at intervals of several days to a week. More severe presentations can occur, including bloodstream infection and disease mimicking acute appendicitis or ulcerative colitis.

Diagnosis

Diagnosis is based on isolation of the organism **from stools** by using selective media and reduced oxygen tension. Most laboratories also combine this with incubation at 42° C (107.6° F).

Visualization of motile and curved, spiral or S-shaped rods by stool phase-contrast or darkfield microscopy can provide rapid presumptive evidence for Campylobacter enteritis.

Treatment

With a mild course, no treatment is needed, the main importance is hydration, or. compensation for mineral losses. Spasmolytics can be given for colic . The disease is generally self-limited and may last up to a week.

Antibiotic therapy may decrease the duration of symptoms if administered early in the course of disease. Because it is generally not possible to distinguish Campylobacteriosis from other etiologies of TD, the use of empiric antibiotics in travelers should follow the guidelines for TD.

Rates of antibiotic resistance have been on the rise in the past 20 years, in particular for fluoroquinolones; travel abroad has been associated with infection with resistant Campylobacter. Clinicians should have a high degree of suspicion for resistant infection in returning travelers. Documented fluoroquinolone resistance has been highest among travelers to Thailand. When fluoroquinolone resistance is proven or suspected, azithromycin is usually the next choice of treatment.

It can be very difficult , especially in children.^{[2][3]}

A diet without fats and simple sugars - carrots, rice ... helps to stabilize.

Campylobacter infection can be a trigger for Guillain-Barré syndrome.

Additional information can be found on the Division of Foodborne, Bacterial and Mycotic Diseases' website: www.cdc.gov/ncidod/dbmd/diseaseinfo/campylobacter_g.htm.

Preventive Measures for Travelers

- No vaccine is available.
- Antibiotic prophylaxis, as used for TD, is likely to be effective, although antibiotic prophylaxis is not routinely recommended.
- Preventive measures are aimed at avoiding ingestion of foods at high risk for contamination, as well as safe water practices while traveling.

Links

Related articles

- Campylobacter species

Literature

- Scattered, Hanuš. . Basics of infectious medicine. - edition. Charles University in Prague, Karolinum Press, 2015. 572 pp. 189. ISBN 8024629321 .
- KLIEGMAN, Robert M., Karen J. MARCDANTE and Hal B. JENSON. Nelson Essentials of Pediatrics. 1st edition. China: Elsevier Saunders, 2006. 5; pp. 513-518. ISBN 978-0-8089-2325-1 .
- Coker AO, Isokpehi RD, Thomas BN, et al. Human campylobacteriosis in developing countries. Emerg Infect Dis. 2002;8(3):237-44.
- Moore JE, Barton MD, Blair IS, et al. The epidemiology of antibiotic resistance in Campylobacter. Microbes Infect. 2006;8(7):1955-66.
- Tribble DR, Sanders JW, Pang LW, et al. Traveler's diarrhea in Thailand: randomized, double-blind trial comparing single-dose and 3-day azithromycin-based regimens with a 3-day levofloxacin regimen. Clin Infect Dis. 2007;44(3):338-46.

Resources

- BENEŠ, Jiří. Infectious medicine. 1st edition edition. Galén, 2009. 651 pp. ISBN 978-80-7262-644-1 .
- Centers for disease control and prevention. Campylobacter [online]. [feeling. 2013-11-18]. Available from: * * * * * <https://www.cdc.gov/nczved/divisions/dfbmd/diseases/campylobacter/>

External links

<http://www.szu.cz/tema/prevence/infekcni-nemoci>

1. ROZSYPAL, Hanuš. *Základy infekčního lékařství*. 1. edition. Charles University in Prague, Karolinum Press, 2015. 572 pp. pp. 189. ISBN 8024629321.
2. KLIEGMAN, Robert M. - MARCDANTE, Karen J. - JENSON, Hal B.. *Nelson Essentials of Pediatrics*. 5. edition. China : Elsevier Saunders, 2006. pp. 513-518. ISBN 978-0-8089-2325-1.
3. <http://www.szu.cz/tema/prevence/infekcni-nemoci>