Campylobacter jejuni

Campylobacter jejuni is a curved gram negative bacilli with characteristic corkscrew motility. It is also oxidase positive and is known to grow well at high temperatures of 42 degrees C. This organism has been recognized as one of the main causes of bacterial foodborne disease. The common routes of transmission are fecal-oral and ingestion of contaminated food or water. Sources include undercooked poultry, unpasteurized milk, and there is an association with contracting disease from puppies with diarrhea. In the GI tract, the organism produces an inflammatory response with bloody diarrhea with cramping and pain. The infection is usually self-limiting and often can be treated with liquid and electrolyte replacement. In some cases, an infection by Campylobacter is a common antecedent to Guillain-Barre syndrome or reactive arthritis.



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Characteristics

Gram-Negative
Graham-cracker Negative-devil
This organism stains gram-negative due to its relatively thin peptidoglycan layer in the cell wall.

Bacillus
Rod
This bacteria is rod, or bacillus, shaped.

Flagella
Flag
This organism is motile and utilizes flagella. This promotes the bacterial motility and chemotaxis required for colonization of the intestinal tract.

Curved
Curved
This organism is a curved bacillus, commonly described as comma or S-shaped.

Corkscrew Appearance
Corkscrew
This organism has a characteristic spiral or corkscrew appearance. This appearance helps to distinguish C. jejuni from other gram-negative rods.

Oxidase-Positive
Ox-daisy
An oxidase test is used to determine if bacteria produce an intracellular oxidase enzyme. These oxidases catalyze the oxidation of cytochrome c, and their presence is used to help differentiate bacteria. Campylobacter are oxidase positive organisms, and produce a deep purple-blue color on lab testing.

Grows Well at 42 Degrees
Camp fire of 42 Degrees
Campylobacter jejuni is known to grow well at 42 degrees Celsius, which helps to differentiate this bacteria from other gram-negative rods that cannot tolerate this level of heat.

Undercooked Meat
Raw Chicken
Campylobacter jejuni can be contracted from undercooked meat, or through food cross-contaminated with raw meat.

Unpasteurized Milk
Unpasteurized milk from cow's udders
This organism can be contracted from unpasteurized milk.

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Animals with Diarrhea

Puppy Feces

Campylobacter jejuni can be contracted by fecal-oral contamination from animals, like dogs and cats, with diarrhea. Thus, it is important to wash hands when in close contact with house pets with diarrhea.

Signs and Symptoms

Bloody Diarrhea

Red Toilet

In the GI tract, the organism produces an inflammatory response, leading to bloody diarrhea associated with cramping and pain.

Guillain-Barre syndrome

Green-Beret

Guillain-Barre syndrome is an acute disorder of the peripheral nervous system, characterized by an ascending paralysis that begins in the hands, or feet, and migrates towards the trunk. If the respiratory muscles are affected, it can cause life-threatening complications. Campylobacter is known to be a trigger for Guillain-Barre syndrome.

Reactive Arthritis

Writing King-Arthur

This particular reactive arthritis is an autoimmune condition that typically develops after an infectious process. The clinical pattern consists of inflammation of the joints, inflammation of the eyes, and urethritis. Campylobacter jejuni has been linked to reactive arthritis. A common mnemonic used to recall the presenting symptoms is “can't see, can't pee, can't climb a tree.”

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