

# **Campylobacter**

**Assistant prof. Buroooj M.R. Al-aajem**

**Department of Microbiology**

**College of Medicine**

Members of the genus **campylobacter** are G<sup>-</sup>, slender, spiral to curved rods. They are motile with darting or corkscrew motion by single polar flagellum, microaerophilic that required 3-5% CO<sub>2</sub>. All are oxidase +, some are catalase +, most reduce nitrate, Urease – (that differentiate them from Helicobacter). **Campylobacters** causes both diarrhea & systemic diseases & are among the most widespread causes of infection in the world. **Campylobacter** infection of domesticated animals are also widespread. *C.jejuni* is the prototype of this group & is a very common cause of diarrhea in humans.

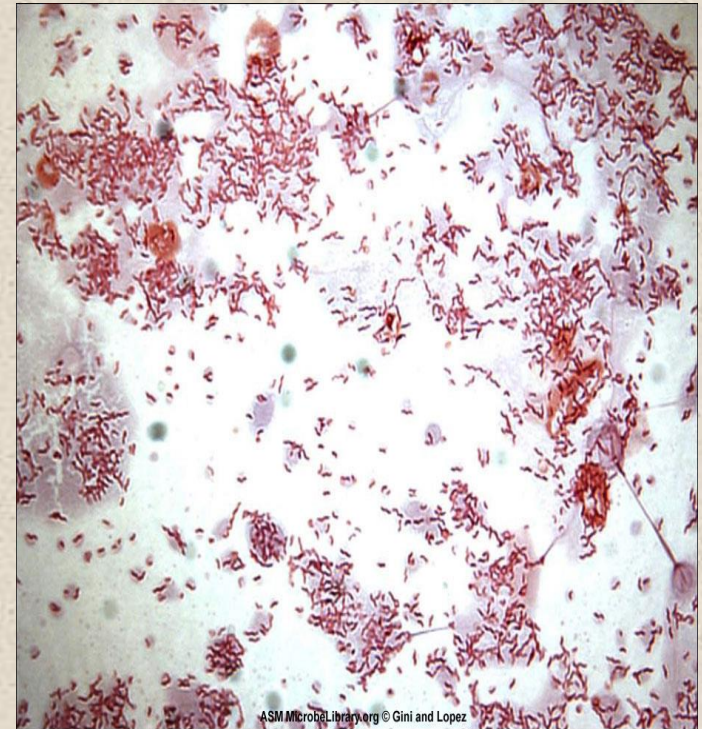
### ***C.Jejuni & C. coli:***

They are emerged as a common human pathogens causing mainly enteritis & occasionally systemic disease. *C. Jejuni & C. coli* cause infections that clinically indistinguishable. These bacteria are common as salmonella & shigella as a cause of diarrhea.

### **Culture:**

Culture is the most important in the isolation & identification of these bacteria. Selective media are needed, & incubation in reduced O<sub>2</sub> (5% O<sub>2</sub>) with added CO<sub>2</sub> (10% CO<sub>2</sub>). Incubation of primary plates of *C.Jejuni & C. coli* should be at 42 °C to prevent the growth of most other bacteria present in the feces. The selective media is Skirrow's medium containing vancomycin, polymyxin B, & trimethoprim to inhibit the growth of other bacteria.

# Campylobacter



## Pathogenesis:

The campylobacters have LPS with endotoxic activity. Cytopathic extracellular toxins & enterotoxin also found. The infection is acquired by oral route from food, drink or contact with infected animals or animal products. *C. Jejuni* is susceptible to gastric acid, thus organisms are required for infection, which is similar to salmonella & shigella , but less than that required for vibrio infection. The bacteria multiply in the small intestine & invade the epithelial cells, & produce inflammation that result in the appearance of leukocytes & RBCs in the stool.

Bloodstream is occasionally invades and clinical picture of enteric fever develops. Localized tissue invasion & the toxic activity appears to be responsible for the enteritis.

## Clinical findings:

Usually humans are infected by consumption of undercooked meat, especially poultry contaminated with either *C.jejuni* (95%) or *C. coli* (5%). Pits may be involved in transmission of campylobacteriosis to humans. Healthy dogs harbor *C. jejuni*, but sometimes associated with diarrhea. The organism found in clinically normal cats. *C.jejuni* is frequently isolated from milk contaminated by feces or via mastitic infection, & is the major source of infection in countries where raw milk is consumed.





An incubation period of 24-72 hrs is followed by severe diarrhea, with blood & leukocytes in feces, fever, vomiting & abdominal pain. There is an acute onset of crampy abd. Pain, profuse diarrhea, headache, malaise, & fever. Usually the infection is self limited within 5-8 days, but occasionally longer.

### **Lab. Diagnosis:**

Specimens: stool

Gram's stained smear to demonstrate the typical “gull-wing” shape rods.

Culture: on selective media with required incubation conditions is the definitive test to diagnose campylobacter enteritis.

## **pathogenesis & Clinical findings**

