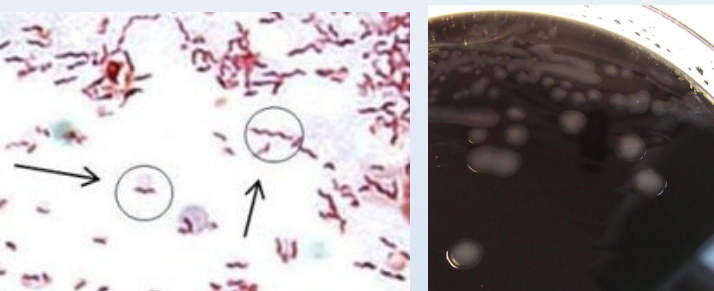




Severn Deanery **Bug of the Week**
30.06.2019



Images from Flickr:

A: "ff campylobacter" by isis325. Taken 31.03.2013 (CC BY 2.0)

B: "Campylobacter jejuni on CCDA" by Nathan Reading. Taken 30.06.2011. (CC BY-NC-ND 2.0)

Causes gastroenteritis in humans and animals. Natural reservoir is **poultry**, widely distributed in other warm-blooded animals. At least a dozen species can cause disease in humans, ***C. jejuni*** and ***C. coli*** most common. *C. jejuni* can also cause bacteraemia in immunocompromised patients and *C. lari* is a recognised cause of recurrent diarrhoea in children.

Pathogenesis:

Transmission usually **faecal-oral**, mostly **food-borne** – via raw undercooked meat especially poultry and unpasteurised milk. Ingestion of untreated water is also a source.

Campylobacter is sensitive to stomach's normal production of hydrochloric acid, therefore the infectious dose is relatively high (usually > 10000 organisms to cause illness).

Sites of tissue injury are the jejunum, ileum and colon. Most strains of *C. jejuni* produce cytolethal distending toxin which inhibits cell division and inhibits activation of the immune system.

Microbiology & identification:

Campylobacter species are Gram negative curved or S shaped "**gull wings**" motile rods with a single polar flagellum. Use carbol fuschin as counterstain as safranin doesn't work. They are micro-aerophilic, oxidase positive, catalase positive and grows optimally at 37 to 42 C. No growth at 25°C. Usually use **charcoal-based selective media at 42°C**. Translucent colonies on blood agar. ID with MALDI-TOF may need subculture beforehand.

The disease:

Campylobacter is 1 of the 4 key global causes of diarrhoeal disease according to the WHO

Incubation period usually **2-5 days**.

Symptoms = characterised by an **inflammatory, sometimes bloody** diarrhoea with **fever**, cramps and pain. Typically lasts 3-6 days.

May cause bacteremia, hepatitis and pancreatitis; post infection complications include reactive arthritis and Guillain-Barre syndrome.

Treatment:

Infection in immunocompetent patients is **usually self-limiting**, the symptoms typically lasting 5-7 days. Treatment can be considered for **severe disease** or **high risk patients** who are immunosuppressed, pregnant, and for those with prolonged symptoms > 10/7. Standard treatment in high-risk cases is **azithromycin**, although other macrolides, quinolones and tetracycline are sometimes used. In addition to antibiotics, patients may require rehydration and electrolyte replacement.

Sources:

PHE SMI 23 identification of Campylobacter species

<https://www.who.int/news-room/fact-sheets/detail/campylobacter>