

Campylobacter Enteritis

Pages with reference to book, From 1 To 3

Rakhshanda Baqai (PMRC Research Centre, Jinnah Postgraduate Medical Centre, Karachi.)

Campylobacter jejuni has emerged as an important cause of acute diarrhoeal disease during the last few years. Although this organism was suspected to cause acute enteritis in man since 1954 but it was not until 1972 in Belgium that it was first shown to be a common cause of diarrhoea (Butzler, 1982). In developing countries it has been reported in 5 to 14% of diarrhoeal cases (W.H.O. Report, 1980). In asymptomatic subjects it is present in insignificant numbers (Chowdhury and Mahgoub, 1981). It is also recognized as a common cause of traveller's diarrhoea (Pitkanen et al., 1983). *C. jejuni* is a slender gram negative spiral or S shaped organism with tapering ends. Infection can occur in all age groups. Males are more susceptible (Chowdhury and Mahgoub, 1981). Infection occurs more during summers (Pitkanen et al 1983) presentation varies from asymptomatic excretion or mild symptoms to severe disease (Blaser et al., 1980; Solomon et al., 1982). Incubation period averages 2 to 5 days but may exceed to 10 days (Blaser et al., 1979). The disease starts with fever in over 50% of the patients (Bosch et al., 1981) along with a general feeling of headache, weakness and confusion. The prodromal state lasts for 2 days and is followed by nausea, abdominal cramps and diarrhoea (Bosch et al., 1981). Dehydration and electrolyte imbalance may occur (Pitkanen et al., 1983). Although the disease is normally self limiting complications such as cholecystitis (*C. Jejuni* has been isolated from bile in pure culture), peritonitis, septicemia and meningitis occasionally occur (Butzler, 1982). Acute colitis mimicking Crohn's disease or ulcerative colitis on proctoscopic examination and barium enema have been described (Syndman, 1982). Presence of blood in stool may mislead the clinician into suspecting intussusception (Butzler and Skirrow, 1979).

Campylobacter jejuni enteritis has been reproduced in rhesus monkey by inoculation of pure culture, and a human volunteer suffered a typical attack of *Campylobacter* enteritis a few days after swallowing a live culture of *C. Jejuni* (Steel and McDernoth, 1978). Experimental infection of bovine udder is also a potential source of *C. Jejuni* in unboiled milk (Jones et al., 1981). There is evidence that *C.jejuni* infection is a zoonosis (Blaser et al., 1980). There are number of ways by which man can be infected. Animal shedding has been a source of diarrhoea in humans (Palmer et al., 1983; Fox, 1982). *C.Jejuni* occurs in the intestine of many animal species as a normal commensal. Domestic animals such as dogs, cats and a wide variety of farm animals as sheep, pigs and chicken constitute a source of human infection (Bosch et al., 1981). Cows milk has recently been shown as an important source of infection (Robinson et al., 1978). It is thought that the organism is introduced in the milk by fecal contamination from bovines (Jones et al., 1981). Contaminated water (Vogt et al., 1982) and improper chlorination is also a source of infection. Person to person transmission have been observed in nurseries among infants and young children, and from mothers to babies during delivery (Anders et al., 1981). Food handlers excreting the pathogen are also responsible for the spread of disease (Jones and Harrop, 1981; Blaser et al., 1982). Diagnosis of *C. jejuni* can be made by direct examination of feces by Gram's stain (Ho et al., 1982). Direct examination by Phase contrast microscopy is also a specific and sensitive method for rapid diagnosis provided the sample is not more than a few hours old. Recognition of *C.jejuni* can be done by their characteristic morphology and oscillating motility. Often the stool also contains RBC's and pus cells (Cameron et al., 1982). Ileal aspirates in children can also be examined (Cadramel et al., 1973). Fecal cultures had the highest yield when obtained from patients within 7 days from the onset of symptoms (Blaser et al., 1983). Fresh stool or rectal swabs can be used for culture. Feces of patients remain positive 2 to 7 weeks after the illness. *C.jejuni* can be cultured on two types of selective medias i.e. Butzler's medium and Skirrow's medium. If the selective medias are used in parallel the number of isolations is increased (Bihingham, 1981). Blood from patients can be cultured on Thioglycollate

medium and Castade type medium. Diagnosis of *C. enteritis* can also be made serologically. Majority of patients develop antibodies which appear during the first few days of illness and quickly reach a maximum titre and then gradually decline. The antibody response can be measured by a number of assays including agglutination test (Skirrow, 1977), Complement fixation test (Butzler et al., 1973), Serum bactericidal assay (Karamali and Fleming, 1979) and immunofluorescence test (Blaser et al., 1979).

Treatment of *C. jejuni* infection is with antibiotic therapy. This organism is sensitive to aminoglycosides, Erythromycin, Clindamycin, Tetracycline, Chloramphenicol, and Furazolidone and resistant to Penicillin, Cephalosporin, Lincomycin, Colistin, and Trimethoprim. Ampicillin and Sulphonamides are intermediate in activity. The antibiotic mostly used is Erythromycin (500mg twice daily for adults). Erythromycin ethylsuccinate 50mg/kg/day for children (Bosch et al., 1981). Erythromycin promptly eradicates the organism but does alter the natural course of disease (Anders et al., 1982; Robins Browne et al., 1983). Resistant strains against this antibiotic are also emerging. In *Campylobacter* septicemia Gentamycin is the drug of choice but Tetracycline, Erythromycin and Chloramphenicol are good alternates. Although the disease is self limiting but it is found that the mean duration of bacterial shedding is shorter in the treated group as compared to those without treatment or on placebo (Pai et al., 1983).

Since *Campylobacter* infection is rising as reported in other countries this pathogen should be looked for in diarrhoeal cases in Pakistan. The large number of diarrhoea stools in which no aetiological agent is identified may be due to *Campylobacter jejuni*. The incidence, seasonal pattern, age and sex relationship, mode of transmission should be determined so that preventive measures can be taken against this pathogen.

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