

CAMPYLOBACTER PYLORI IN GASTRODUODENAL DISEASE

Pages with reference to book, From 253 To 255

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The role of *Campylobacter Pylon* (CLO) — gram negative short spiral or curved microaerophilic bacteria has recently been emphasized in inflammatory gastric disorders.¹⁻⁴ Transmitted through the use of unsterilized equipment, these organisms are almost always seen in the presence of chronic gastritis and rarely in the normal antral mucosa.⁵⁻¹⁴ Microbiological, serological and therapeutic data strongly implicate *C. Pylori* as the pathogen of chronic active gastritis⁸⁻¹³ but the nature of association between CLO and histologically abnormal gastric mucosa needs to be defined.¹³ CLO are occasionally found on histologically normal body type of gastric mucosa but only in association with chronic gastritis in the antrum.^{14,15} The organisms produce intracellular¹⁴⁻¹⁶ after the mucosa has been damaged by some other agent.¹⁶ Transmission of CLO does not occur through the endoscope³ neither is the result of reflux and contamination through duodenum.

High PH of gastric juice prevents colonization of *C. Pylori*, therefore, organisms lie under the surface mucus layer,^{1,7,18} where mucus blanket maintains a neutral PH¹⁹. CLO produced chronic gastritis plus gastric acid secretion result in peptic ulceration. *C. Pylori* have been isolated from the duodenal mucosa of ulcer patients.²⁰⁻²³ Prompt ulcer healing and infrequent relapses are expected after eradication of *C. Pylon*. Some workers believe that the association of this organism to ulcer disease is coincidental.²⁴⁻²⁵ Breaking of gastric mucosal barrier by the urease activity of the organism is thought to be the genesis of gastric ulcer. High prevalence of *C. Pylori* is seen in patients with non ulcer dyspepsia.^{15,26} Role of *C. Pylori* in the occurrence of gastric carcinoma would depend upon whether type B gastritis is pre-cancerous.²⁷

CLO remain viable in the endoscopic biopsies kept at 4°C for 5 hours. Heavier growth on culture is seen by grinding instead of mincing the tissue. Gram's stain of gastric brushings and biopsy smears give a better yield but simple culture gives a positive growth in 90% cases.^{4,28}

Negative cultures result from swallowed local anaesthesia, antacids, antibiotics, H₂ receptor antagonists, glutaraldehyde contamination of forceps, wrong biopsy site, poor handling and delayed plating of specimen.²⁸ Best growth is seen on moist chocolate agar under microaerophilic conditions at 37°C. Smooth transparent 1 mm colonies appear within 3 — 4 days.^{28,29} CLO isolates can be stored at — 70°C in glycerol citrate. Improperly stored CLO assume coccoid shape on culture⁴. The ability of CLO to split urea makes this test diagnostic Of its presence.^{30,31} One minute test gives 90% positivity, thereby facilitating prompt management³². The non invasive test includes ingestion of labelled urea and its detection in the breath.^{33,34}

Serum agglutination tests show. raised titres in CLO positive cases^{13,26}. Serum tgA and IgG titres are also raised in positive cases suggesting active infection.³⁵ High specific IgG titres were found in children with active gastritis due to *C.Pylori*.³⁶ Temporary hypochlorhydria with H₂ receptor antagonists can facilitate infection in healthy subjects ingesting CLO culture,⁴ *C. Pylori* are sensitive to bismuth citrate which eradicated the organism in 68% cases and lowered the IgG and igA levels significantly while ranitidine and metromidazole failed to show such a response.³⁶ Combination of bismuth and antibiotic decreases the relapse rate. Sensitive antibiotics include

tetracydin, erythrocine, penicillin, ampicillin, amoxicillin, gentamycin, kenamycin, novobiocin, chlorobiocin and nitrofurantoin. Resistance to vancomycin, sulphamethoxazole and trimethoprim has been reported.^{4,10,30}

Gastritis and peptic ulcer disease is a common G.I. problem in Karachi. Therefore a study is being carried out at the PMRC Research Centre Karachi, in which the association of *C. Pylori* with gastritis and duodenal ulcer is being studied with some positive results.

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