

HELICOBACTER

- These are short, spiral, shaped, curved, GNB with flagella at
- They reside on the mucin of the surface of neck regions of the foveolar cells.

MODE OF SPREAD - Oro-oral or fecal-oral Route.
Source of *H. pylori* - Human as only host.

PATHOGENESIS: may cause Acute gastritis, mainly involving the Antrum or Atrophic gastritis involving the body of fundus.

1) ANTRAL GASTRITIS: It is predominantly localized & mostly affect the antrum → Antral gastritis → normal or ↑ Acid Production.

MULTIFOCAL (PILORIC) ATROPHIC GASTRITIS: Antral gastritis may progress to involve the more proximal stomach (body of fundus).
↓
Multifocal Gastritis.

→ Pyloric mucosal Atrophy, Reduced parietal cell mass of Acid secretion, Intestinal Metaplasia, ↑ Risk of CA stomach.

MECHANISM OF ACTION OF H. PYLORI:

→ FLAGELLA: make them mobile, Allow them to move in viscous mucus. They burrow & live beneath the mucus layer above the epithelial cells.

→ UREASE: Produced by *H. Pylori*. Release Ammonia

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This raises local pH around the organism.

(protects bac from Acidic pH → enhance survival)

↓
↑ pH Act on the Antral G cell & Release Gastrin leading to hypergastrinemia → hypersecretion of gastric Acid.

- ADHESINS: they bind to the mucus
 - CYTOTOXINS: cytotoxin associated gene A (CagA),
 vacuolating Agent (VacA gene)
 involved progression of disease
 ↓

They initiate and sustain innate and Adaptive
 immune responses of damage the Mucosa

Host factors → ↑ expression of proinflammatory cytokines (IL-1 β , TNF)
 ↓ expression of Anti-inflammatory cytokines - IL-10

The Above mechanism Activate neutrophil And macrophages of
 impair mucosal defense leading to gastritis

MORPHOLOGY:

GROSS: mucosa is usually erythematous. nodular appearance on
 endoscopic examination

MICRO: Gastric Antrum (most common site) - Biopsy is performed
 H. pylori concentrated within the superficial Mucous
 covering the epithelial cell surface of neck Regions

(The presence of intraepithelial neutrophils and subepithelial
 plasmacells are characteristic of H. pylori)

- Neutrophil may Accumulate in the lumen of gastric pits
 produce pit Abscess.

→ Gastritis may extend proximally to involve the body of fundus.
 loss of parietal and chief cells

- Lymphoid Aggregates.

⇒ Stains:

Modified Gram stain And Diff - Quik stain

Silver stain: Warthin - Starry, Giemsa stain

Immunohistochemistry for H. pylori

Sig: Peptic ulcer Disease, Chronic H. pylori → PUD
 Gastric cancer of lymphoma