All you need to know about Helicobacter Pylori

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WELCOME

- What is your interest in H. Pylori?
- How often do you see this disease process?
- What signs and symptoms lead to this differential diagnosis?
- What testing do you use to diagnose?
- How do you treat H. Pylori?
- What else would you like to know?

Objectives:
Helicobacter Pylori

- Discuss discovery history of H. Pylori
- Understand the practitioner role in the disease process H. Pylori
- Evaluating treatment options H. Pylori
Background

- Spiral shaped bacteria
- Originally "Campylobacter-like organism,"
- Currently *Helicobacter pylori*
- Found in mucus lining of stomach
- Common worldwide
- US 50% of population >60 years old affected
- Asian countries have 2-6 fold increased risk of gastric cancer
Helicobacter pylori

Discovery

- Discovered in Australia in 1983
- Professor Barry J. Marshall developed PV test
- Drs. Barry J. Marshall and John R. Warren
  First to determine the correlation between
  H. pylori bacterium and Peptic Ulcers
- Nobel Prize in Physiology and Medicine in
  December 2005
Pathophysiology H. Pylori

• Transmissions oral by means of fecal matter ingestion of tainted food or water via gastro-esophageal reflux, saliva, emesis
• Contagious (person to person)
• Colonization (populates body but does not cause disease)
• Bacteria becomes infecting agents when genes release toxic chemicals leads to gastritis

Information

• Acquired in childhood without problems
• Only 15-20% who carry bacterium develop ulcer symptoms
• Causes chronic active Gastritis
• Causes 60-80% of stomach gastric ulcers
• Causes 70-90% of duodenal ulcers
• Causes distal gastric adenocarcinomas
• Causes gastric lymphomas

Client Assessment

Signs and Symptoms
• Burning abdomen on empty stomach and between meals and night
• Loss of appetite
• Burping
• Bloating
• Unintentional weight loss
Established Indications for Diagnosis and Treatment

- Confirmed gastric ulcer
- Confirmed duodenal ulcer
- Patients taking antisecretory maintenance therapy for peptic ulcer
- Gastric MALT lymphoma (low grade)
- Uninvestigated Dyspepsia

Risk Factors H. Pylori

- Living in crowded conditions
- Living with infected persons
- Developing country
- Inadequate water supply
- Age > 60 years old
- Asian world population
- United States: African Americans, Hispanics, lower socio-economic groups

Controversial Indications: Diagnosis and Treatment

- Functional dyspepsia
- GERD
- Iron deficiency anemia
- Clients taking NSAIDS
- High risk gastric cancer clients
- Idiopathic thrombocytopenic purpura

(Chey & Wong, 2007)
Peptic Ulcer

Found: Lining of stomach, small intestine or esophagus

Signs and Symptoms

• Severe abdominal pain
• Hematemesis
• Fatigue
• Anemia
• Tarry stools

Diagnostic Testing

• Proton pump inhibitors (PPIs), bismuth subsalicylate (Pepto-Bismol) and antibiotics can interfere with the accuracy test. Discontinue one or two weeks before testing
• Venous serum test: check immune response
• Urea Breath Test: compound when proteins are broken down and carbon dioxide confirms H. pylori presence (approved children 3 & >)
• Stool antigen test
• Referral Gastroenterologist for Endoscopy
Preventing for Endoscopy

Referrals

- Gastroenterology: Endoscopy assesses stomach and duodenum. Biopsies confirm diagnosis. Culture done in lab from biopsy specimen
- Oncology: Cancer therapy
- Hematology: Anemia
- Home Care: Assess living conditions
- Family/Significant others/Cohabitant testing

Pharmacology Therapy

- Pharmacokinetics
- Monitoring clients responses
- Protocols
- Course of Therapy
  - Antibiotic options
  - Acid Blocking Agents
Proton pump inhibitors (PPIs). These drugs stop acid from being produced in the stomach. Some examples of PPIs are omeprazole (Prilosec, others), esomeprazole (Nexium, others), lansoprazole (Prevacid, others) and pantoprazole (Protonix, others).

Histamine (H-2) blockers. These medications block a substance called histamine, which triggers acid production. Examples include cimetidine (Tagamet) and ranitidine (Zantac).

Bismuth subsalicylate. More commonly known as Pepto-Bismol, this drug works by coating the ulcer and protecting from stomach acid.

Antibiotics

- Flagyl (Metrodiazole)
- Amoxil (Amoxicillin)
- Biaxin (Clarithromycin)
- Tetracycline (Sumycin)
- Tindamox (Tinidazole)
- Levaquin (Levofloxacin)

Combination Treatment

- Bismuth subsalicate (Pepto Bismol) 525mg 2 tab/day plus tetracycline 500mg 4Xday plus Flagyl 250-500mg daily plus PPI daily po X 10-14 days
- Biaxin (Clarithromycin) 500mg 2Xday plus Amoxil (Amoxicillin) 1Gm 2Xday plus PPI 2X day po X 10-14 days
- Flagyl (metrodiazole)250mg 2Xday plus Biaxin 500mg 2Xday plus acid blocking agent 2X day po X10-14 days

(Chey and Wong, 2007, p1808)
Regime Compliance

- Levofloxacin 500mg daily po
- PPI 2Xday po
- Amoxicillin 1 GM 2X day po
- Combination 10—14 days
- Consider adding Flagyl 500mg 2X day
- Consider adding Probiotics
- Follow up GI referral

Persistent H. Pylori Infections

- Levofloxacin 500mg daily po
- PPI 2Xday po
- Amoxicillin 1 GM 2X day po
- Combination 10—14 days
- Consider adding Flagyl 500mg 2X day
- Consider adding Probiotics
- Follow up GI referral

Failed Clarithromycin Regime

Rescue or salvage therapy:
- Bismuth quadruple therapy consisting of:
  - PPI, tetracycline,
  - metronidazole, and bismuth
Client Teaching

To improve healing from H. Pylori

• Avoid Smoking
• Avoid Alcohol
• Avoid Stress
• Avoid Spicy Foods
• Avoid NSAIDS

Prevention:
H. Pylori

• Wash your hands before and after using the bathroom
• Wash your hands before eating
• Eat properly prepared food
• Drink water from a clean, safe source

http://www.niddk.nih.gov/Pages/default.aspx)
Assess *H. pylori* > 4 weeks after treatment
- Stool antigen test
- Urea Breath test
- Biopsy based testing per Endoscopy

Goal to decrease risk of recurrence (PUD)

Probiotic treatment reduced *H. pylori* therapy-associated side effects (incidence of side effects: 23% vs. 46%, with combination therapy vs. *H. pylori*-eradication treatment alone; \( \chi^2 \) test, \( P = 0.04 \)). No study could demonstrate the eradication of *H. pylori* infection by probiotic treatment (Lesbros-Pantolfickova, Corthesy-Theulaz & Blum, 2007).

- 3-month two-phase fashion, the first 402 patients received an OPT-TRI therapy [esomeprazole (40 mg b.d.), amoxicillin (1 g b.d) and clarithromycin (500 mg b.d.) for 14 days] and the last 375 patients an OPT-CON treatment [OPT-TRI therapy plus metronidazole (500 mg b.d.)]. Empiric OPT-CON therapy achieved significantly higher cure rates (>90%) compared to OPT-TRI therapy. Addition of metronidazole to OPT-TRI therapy increased eradication rates by 10%. (Molina-Infante et al., 2015)
References


References


Questions?

Thank you for your attention

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