

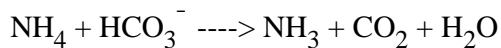
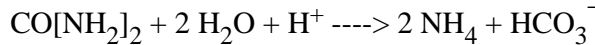
# MEDICAL PHYSIOLOGY

## G.I. Conference - Quiz 6B

### January 18, 2001

**1. Explain the reason for a patients 'putrid' breath in cases of *H. pylori* infection.**

Production of ammonia and bicarbonate from urea by *H. pylori*.



**2. List 3 positive indications or symptoms of gastritis due to severe *H. pylori* infection.**

- a. metaplasia of antral mucosa
- b. putrid breath
- c. fasting gastric pH is elevated (must be determined in absence of antacid treatment or H<sub>2</sub> blockers)
- d. any of the bacteriology tests: morphology, selective staining, urea metabolism producing ammonia and bicarbonate

**3. Why is it important to determine whether a patient has taken non-steroidal anti-inflammatory drugs (NSAIDs) when suspecting a case of *H. pylori* infection?**

Chronic NSAID administration produces a high risk of peptic and duodenal ulceration, producing some of the same clinical symptoms of gastritis but not necessarily due to *H. pylori* infection. Therefore treatment would not be antibacterial in nature without additional testing.

**4. What symptoms of this patients gastritis might be alleviated by treatment with H<sub>2</sub> blockers and why?**

Histamine receptor blockers will reduce gastric acid secretion. This will reduce inflammation due to ulcerations produced by the *H. pylori* and reduce emesis of acidic vomitus. If the ulcerations heal sufficiently, the coffee ground material (blood) should be diminished.

**5. What is triple therapy for treatment of gastritis?**

The true definition of triple therapy is treatment with 2 antibiotics in combination with a proton pump inhibitor:  
a PPI to inhibit gastric acid secretion and 2 antibiotics from different classes, a H<sub>2</sub> blocker is NOT part of triple therapy.

# MEDICAL PHYSIOLOGY

## G.I. Conference - Quiz 6A

### January 23, 2001

**1. What long-term health risks should be monitored in persistent cases of *H. pylori* infection?**

*H. pylori* infection is associated with a high incidence of gastric adenocarcinoma. (this answer is required for full credit). This is often preceded by metaplasia of the gastric mucosal layer revealed by endoscopy  
Recurrence of infection

**2. How can endoscopy contribute to the diagnosis of *H. pylori* infection?**

This would reveal the metaplasia of the gastric mucosal layer (increased gastrin production associated with parietal cell growth) and provide one of the positive indicators of *H. pylori* infection. Biopsy material is also obtained that would lead to direct identification of *H. pylori*

**3. Give two examples of medical conditions other than *H. pylori* infection that are associated with gastritis**

inflammation due to administration of NSAIDs  
autoimmune disease  
pernicious anemia  
gastrinoma

**4. Describe two properties of *H. pylori* that can be used to distinguish this bacterium from other bacteria.**

morphology: helical shaped bacteria  
selective staining: use acridine orange, Giemsa or Warthin-Starry silver stain  
in vitro or in vivo urea metabolism producing ammonia and bicarbonate  
immunodetection with standard detection kits for *H. pylori*

**5. Why might the fasting gastric pH be abnormal in a severe case of *H. pylori* infection?**

*H. pylori* produce ammonia and bicarbonate from urea normally present in the gastric secretion. A severe *H. pylori* infection could produce enough ammonia to neutralize the fasting gastric pH.

