Proceeding of the NAVC
North American Veterinary Conference
Jan. 8-12, 2005, Orlando, Florida

Reprinted in the IVIS website with the permission of the NAVC
http://www.ivis.org/
**HELCOBACTER GASTRITIS: DOES IT CAUSE VOMITING?**

Michael S. Leib DVM, MS, Diplomate ACVIM
Virginia Maryland Regional College of Veterinary Medicine
Virginia Tech, Blacksburg, VA

*Helicobacter pylori* is the single largest cause of chronic gastritis and peptic ulceration in humans. It is also associated with an increased risk of gastric lymphoma and adenocarcinoma. Spiral bacteria were described in 1896 in humans and several animal species. They were rediscovered in 1983 as a cause of peptic ulceration. *Helicobacter pylori* is a microaerophilic curved spiral gram negative organism with 4 flagella. The organism lives in gastric mucus. It can attach to epithelial cells and may penetrate intercellular junctions. High urease activity cleaves urea to produce ammonia, which helps to neutralize the acid environment. The immune system does not remove the organisms. Infection can be life-long without treatment. As many as 90% of people have been found to be infected in some studies. Some infections do not cause clinical signs. Diagnosis can be made with serology, cytology of gastric mucus, culture of biopsies, histopathology of biopsies with H&E or Silver stains, C-14 labeled urea breath tests, or the CLO test (biopsy placed in gel with urea and a pH indicator).

Many treatments have been studied. The gold standard is omeprazole with ampicillin, metronidazole, and Pepto Bismol for 2 weeks.

Many species of spiral bacteria have been identified in dogs and cats: *H. felis, H. pylori, and H. heilmannii* (formerly called *Gastrospirillum hominis*), *H. salomonis*, and *H. bizzozeronii* are the most common. Experimentally, infection can be established in both dogs and cats. Lymphoid follicular gastritis can be produced. However, in these experimental studies, clinical signs are absent or very mild. Several surveys of laboratory and pet populations have shown a very high prevalence rate. Peptic ulceration appears to be very rare in dogs and cats. At the present time there are many unanswered questions in dogs and cats: 1) What is the role of *Helicobacter* in clinical cases of chronic gastritis? 2) What is the optimal treatment? 3) Is the organism zoonotic? 4) Does it have a role in other diseases such as gastric cancer and inflammatory bowel disease?

In the author’s clinic a diagnosis of *Helicobacter* associated gastritis is based on the following criteria: 1) Clinical signs of chronic vomiting, 2) gross and histologic evidence of gastritis, 3) absence of other causes of chronic vomiting following a thorough diagnostic workup, and 4) prompt response to therapy. In at least 25% of cases in which *Helicobacter* is identified, I think it is the cause of the clinical signs and needs to be treated. In many other cases I think it contributes to the clinical signs and the animal benefits from eradication treatment. I have recently completed a clinical study in dogs with chronic vomiting comparing the effects of 2 weeks BID treatment with triple therapy (amoxicillin 15 mg/kg, metronidazole 10 mg/kg, and Pepto Bismol tablets ([<5 kg; 0.25 tablet, 5-9.9 kg; 0.5 tablet, 10-24.9 kg; 1.0 tablet, and >25 kg; 2.0 tablets]) to quadruple therapy (triple therapy plus famotidine 0.5 mg/kg). Six months after completing therapy approximately 41-44% of dogs were found to be negative for spiral bacteria. However, the frequency of vomiting was reduced by approximately 85% in both groups. It was not possible to determine if dogs positive 6 months after therapy were due to reinfection or recrudescence of infection. Currently I am evaluating the effects of clarithromycin (7.5 mg/kg BID ) based treatments, in combination with amoxicillin (15 mg/kg BID) or omeprazole (0.7mg/kg SID).

It will take many controlled clinical studies before we become comfortable about the role of *Helicobacter* in dogs and cats, and can answer some of the questions I have proposed above. Our patients will benefit from thoroughly evaluating every dog and cat with chronic vomiting and remaining conservative in making the association of *Helicobacter* to the cause of the vomiting. Failure to rapidly respond to treatment suggests that another diagnosis is necessary.

**REFERENCES**