

Combating *H. pylori*

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Inflammation is definitely the buzz word when we talk about chronic disease. Markers like C-reactive protein and interleukin-6 are indicators of inflammation but what's behind those markers? What turns on the chemical messengers we call cytokines? One question that seems to be ignored is, "What causes the inflammation?" Well, one of the causes of inflammation is infection. And one infection that is very contagious and prominent throughout the world is *H. pylori*.

50% of the world's population and 25% of the western world harbor this bacterium. In developed nations it is currently uncommon to find infected children, but the percentage of infected people increases with age. For those over 60, about 60% are infected. *H. pylori* is present in virtually all cases of duodenal ulcers and 80% of those with gastric ulcers. Virtually all people who harbor this organism acquire chronic superficial gastritis.



In hypertensive patients, one study demonstrated a significant decrease in blood pressure values, particularly diastolic blood pressure, after *H. pylori* eradication, reinforcing the connection between infection and inflammation.

To avoid the acidic environment of the interior of the stomach, *H. pylori* uses its flagella to burrow into the mucus lining of the stomach to reach the epithelial cells underneath, where there is a more neutral pH. *H. pylori* is able to sense the pH gradient in the mucus and move towards the less acidic

region. *H. pylori* also has the ability to neutralize the acid in its environment. It does this by producing large amounts of urease, which break down the urea present in the stomach to carbon dioxide and ammonia.

The ammonia, which is basic, then neutralizes stomach acid. *H. pylori* harms the stomach and duodenal by several mechanisms. The ammonia produced to regulate pH is toxic to epithelial cells, as are various biochemicals produced by *H. pylori*. The biochemical by-products cause damage to epithelial

cells, disrupt tight junctions and ultimately result in apoptosis.

Based on its ability to neutralize hydrochloric acid you can see why chronic H. pylori infection is associated with hypochlorhydria. Nutrients that specifically need hydrochloric acid to be absorbed are protein, iron, copper, B12, folic acid, calcium and magnesium.

We can test on invasively for H. pylori infection with a blood antibody test, stool antigen test, or with the carbon urea breath test. In blood and stool, antibodies can remain long after the infection has been cleared up. With the carbon urea breath test, patients drink a carbon labeled urea which the bacterium metabolizes, producing labeled carbon dioxide that can be detected in the breath. The breath test can be done through LabCorp and seems to be the most sensitive for detecting the presence and ultimately the absence of infection after treatment.

For stomach and upper digestive problems, particularly bacterial issues like H. pylori, Dr. Gary Lasneski developed Bio-HPF (short for H. pylori formula). I like it because it is geared to increase the integrity of the mucosal barrier with things like deglycyrrhized licorice and slippery elm as well as create an environment that is not conducive to the growth of bacteria. Components like bismuth, berberine, myrrh and clove have also been added and are very effective in reducing bacterial growth. Bentonite clay is added to bind up the bacteria, dead or alive, and to escort them through the GI tract so that they can't cause further harm. Use 2 capsules, three times a day.

With upper gastric infections, Dr. Lasneski also recommends FC-Cidal, 2 bid to handle any hidden yeast infections and support the

antibacterial effects of Bio-HPF. Most people consider an herb to be either antifungal or antibacterial but in nature these botanicals have multiple roles. And although the ingredients in FC-Cidal are familiar in yeast protocols, FC-Cidal has antimicrobial properties as well.

Gastrazyme has been known by clinicians for years to put out the fires for a hot stomach. Use 4 tablets before a meal. For severe cases you can increase the number of tablets per meal until the stool turns green, which is a sign that the bowel has as much chlorophyll as it can absorb. Chlorophyll is a tremendous gut healer. Whenever I think about stomach or gut issues, I always think about the cell membrane that may be comprised by the infection.

To support cell membranes, 3 grams of essential fatty acids should be added to the diet. Also add probiotics in the form of BioDoph-7 Plus, 1-2 bid between meals and away from Bio-HPF and FC-Cidal. Numerous authors have shown the value of prebiotics and probiotics while antibacterial agents are used.

Remember infections, whether in the stomach or anywhere else can cause increases in cytokines which result in elevated levels of inflammation. H.pylori for example has been shown to increase CRP and IL-6, two well known markers for inflammation. But the point is inflammation in one part of the body due to leaky membranes can cause increases in systemic inflammation thereby creating all kinds of seemingly non-related events. So especially for your older patients, remember H. pylori.

Thanks for reading this week's edition of the Tuesday Minute. I'll see you next Tuesday