Use of naltrexone reduces inflammation in Crohn's patients

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Naltrexone reduced inflammation in Crohn's patients in a research study at Penn State College of Medicine.

Crohn's disease is a chronic inflammatory condition of the gastrointestinal tract causing abdominal pain, diarrhea, gastrointestinal bleeding and weight loss. Treatments for Crohn's disease are designed to reduce the inflammation but may be associated with rare but serious side effects, including infections and lymphoma. Research suggests that endorphins and enkephalins, part of the opioid system, have a role in the development or continuation of inflammation.

Naltrexone is a drug used to help recovering alcoholics and drug users stay clean. It inhibits the body's opioid system that regulates pain and is involved in cell growth, repair and inflammation. Naltrexone binds to a protein receptor that blocks the effects of opioids, including the body's own enkephalins and endorphins, substances that reduce pain and produce a feeling of wellbeing.

"Although the cause of Crohn's disease is unknown, research suggests it involves a complex interplay of environmental, genetic, microbial, immune and nonimmune factors," said Jill P. Smith, M.D., professor of medicine. "We hypothesize that the opioid system is involved in inflammatory bowel disease and that interfering with an opioid receptor will lead to the reversal of the inflammation."

Researchers studied 40 patients with active Crohn's disease. Patients received either naltrexone or a placebo for 12 weeks. All patients then continued on naltrexone for an additional 12 weeks. This was a double-blind study with neither the patient or healthcare provider knowing which treatment was being received.

Eighty-eight percent of those treated with naltrexone had at least a 70-point decline in Crohn's Disease Activity Index scores compared to 40 percent of placebo-treated patients. CDAI is a point system used to quantify symptoms in Crohn's patients. Researchers noted no statistical difference at four or eight weeks of treatment, suggesting a response requires at least 12 weeks of treatment. Results were published in the journal *Digestive Diseases and Sciences*.

Gastrointestinal inflammation was evaluated by appearance of the intestine on colonoscopy and scores from biopsy specimens. After 12 weeks, researchers noted no change in those taking a placebo. However, 78 percent of those on naltrexone experienced healing in the lining of the intestine.

For those patients who received a placebo for 12 weeks and then were placed on naltrexone for the following 12 weeks, 70 percent experienced at least a 70-point decline in the CDAI score and healing of the colon as seen on colonoscopy. Patients who continued use of naltrexone for an additional 12 weeks (24 total weeks) had a further 75-point decline in CDAI scores, leading to remission (score of less than 150) in 50 percent of the patients.

"We report that naltrexone improves clinical and inflammatory activity of subjects with moderate to severe Crohn's disease compared to placebo-treated controls," Smith said.

The researchers are planning clinical trials to look at use of naltrexone in children with Crohn's disease and have secured orphan drug status from the Food and Drug Administration for the use of naltrexone in children with Crohn's disease. Smith and Zagon hold a patent for the use of naltrexone in inflammatory bowel disease -- Crohn's disease and ulcerative colitis.

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