Curcumin (Turmeric) in Treating GI Diseases: IBD and Pancreatitis

For a discussion of the problems with Turmeric, Black Pepper, Coconut Oil, and The Golden Paste in Cats, please see Turmeric & The Golden Paste: Unsafe for Cats?

I am not familiar with anyone using standardized curcumin (processed to increase bioavailability) as an adjunct therapy in managing IBD or pancreatitis. I am using it to treat arthritis in two cats and asthma in one cat. Her asthma is 100% controlled solely with the use of standardized curcumin (although it is given along with 500mg of krill oil. The krill oil alone made no noticeable impact on her asthma). The dose for cats is 15mg – 25mg per pound (450g) of cat, though toxicity levels are much higher doses:

> "Curcumin is a safe supplement for cats. Toxic limits have been set very high in animal studies, and although ulcerogenic dosages in a study of rats were set at 100 mg/kg [Prasad], one private pet owner, whose cat suffered from myelofibrosis, has reported via his website daily dosages as high as 1 to 1 1/2 gms of unenhanced curcumin and 500 mgs of both piperine-enhanced curcumin and Curcu-Gel without side effects." Reference:
> http://www.fivtherapy.com/curcumin.htm
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> PLEASE NOTE: Curcumin should not be used concurrently with chemotherapy, especially if involving doxirubicon. It should not be used in pancreatitis when there is bile duct obstruction.
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> For a full list of clinical indications, mechanism of action, adverse reactions, warnings and contraindications, please see Memorial Sloan Kettering Cancer Center's Integrative Medicine website http://www.mskcc.org/cancer-care/herb/turmeric

If anyone wishes to try supplementing with a standardized curcumin product, please discuss this first with your vet, and as always with IBD kitties, introduce it very slowly, working up to the full dose you target over time. My experience is that it is mild-tasting (none of my cats have rejected food with it added and the volume is very little especially if divided between meals). Please see

our file Turmeric & The Golden Paste – Unsafe for Cats? for information on what curcumin to purchase.

For a discussion of curcumin and its relationship to turmeric, and a quick review of its properties and uses, see: http://www.drweil.com/drw/u/QAA400915/Curcumin-or-Turmeric.html

Basically, according to Dr. Weil in the Q&A library:

> Population studies have shown that elderly villagers in India appear to have the lowest rate of Alzheimer's disease in the world, and researchers have speculated that the anti-inflammatory effects of curcumin may be partly responsible. (Alzheimer's begins as an inflammatory process in the brain, and Indians eat turmeric with almost every meal). So far, however, I've seen no evidence of benefit from curcumin supplementation in Alzheimer's patients.
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> Other studies of turmeric and curcumin have shown the following benefits:
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> - Turmeric extract worked as well as a non-steroidal anti-inflammatory drug for treatment of osteoarthritis of the knee in a study published in the August 2009 issue of the *Journal of Alternative and Complementary Medicine.*
> - Laboratory studies suggest that curcumin acts as a weak phytoestrogen and seems to have cancer protective effects.
> - Lab studies have also shown that curcumin induces programmed death of colon cancer cells, and clinical trials are investigating the use of curcumin in treatment of colon cancer.
> - **Curcumin suppresses microinflammation in the GI tract associated with inflammatory bowel disease.** (Bold, my emphasis)

Here is a quick list of the pertinent literature I have found on the subject (though please also reference the list in the Memorial Sloan Kettering review, link above) with short summaries. Some links are to abstracts only, as the full reports require purchase. I have not determined if a bioavailability-enhanced version of curcumin was used in the studies.

General Reviews of Curcumin in scientific literature:

Gupta et al. 2013. *Therapeutic Roles of Curcumin: Lessons Learned from Clinical Trials*
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3535097/?report=reader#!po=5.20833

Jurenka 2009. *Anti-inflammatory Properties of Curcumin, a Major Constituent of Curcuma longa: A Review of Preclinical and Clinical Research*
http://www.altmedrev.com/publications/14/2/141.pdf

In IBD:

2009 article about research published by Steele Children's Research Center at The University of Arizona, "*Curcumin May be Viable Supplement to Treat Inflammatory Bowel Disease*" http://phys.org/news167932895.html

"Basically, they have shown that curcumin decreases the severe inflammation and resultant intestinal damage caused by IBD."

Hanai H, Sugimoto K 2009 *Curcumin has bright prospects for the treatment of inflammatory bowel disease.* http://www.ncbi.nlm.nih.gov/pubmed/19519446 Abstract Only.

"Therefore, in recent years, the efficacy of curcumin has been investigated in several experimental models of IBD. The results indicate striking suppression of induced IBD colitis and changes in cytokine profiles, from the pro-inflammatory Th1 to the anti-inflammatory Th2 type. In human IBD, up to now, only one open study has achieved encouraging results. In this study, patients were given curcumin (360 mg/dose) 3 or 4 times/day for three months. Further, curcumin significantly reduced clinical relapse in patients with quiescent IBD. The inhibitory effects of curcumin on major inflammatory mechanisms like COX-2, LOX, TNF-alpha, IFN-gamma, NF-kappaB and its unrivalled safety profile suggest that it has bright prospects in the treatment of IBD. However, randomized controlled clinical investigations in large cohorts of patients are needed to fully evaluate the clinical potential of curcumin."

Taylor RA, Leonard MC 2011. *Curcumin for inflammatory bowel disease: a review of human studies.* http://www.ncbi.nlm.nih.gov/pubmed/21649456 Full report available.

"Although two small studies have shown promising results, all authors conclude that larger-scale, double-blind trials need to be conducted to establish a role for curcumin in the treatment of ulcerative colitis. In addition to improving results when used in conjunction with conventional medications for UC, curcumin may pose a less-expensive alternative."

Full Report: http://www.altmedrev.com/publications/16/2/152.pdf

Baliga et al. 2012. *Curcumin, an active component of turmeric in the prevention and treatment of ulcerative colitis: preclinical and clinical observations.* Abstract only. http://www.ncbi.nlm.nih.gov/pubmed/22833299

"Inflammatory bowel disease (IBD) comprising of ulcerative colitis (UC) and Crohn's disease

(CD) is a major ailment affecting the small and large bowel. In clinics, IBD is treated using 5-amninosalicylates, antibiotics, the steroids and immunomodulators. Unfortunately, the long term usages of these agents are associated with undue side effects and compromise the therapeutic advantage. Accordingly, there is a need for novel agents that are effective, acceptable and non toxic to humans. Preclinical studies in experimental animals have shown that curcumin, an active principle of the Indian spice turmeric (Curcuma longa Linn) is effective in preventing or ameliorating UC and inflammation. Over the last few decades there has been increasing interest in the possible role of curcumin in IBD and several studies with various experimental models of IBD have shown it to be effective in mediating the inhibitory effects by scavenging free radicals, increasing antioxidants, influencing multiple signaling pathways, especially the kinases (MAPK, ERK), inhibiting myeloperoxidase, COX-1, COX-2, LOX, TNF-α, IFN-γ, iNOS; inhibiting the transcription factor NF-κB. Clinical studies have also shown that co-administration of curcumin with conventional drugs was effective, to be well-tolerated and treated as a safe medication for maintaining remission, to prevent relapse and improve clinical activity index. Large randomized controlled clinical investigations are required to fully understand the potential of oral curcumin for treating IBD."

Sigrid A Rajasekaran 2011. *Therapeutic potential of curcumin in gastrointestinal diseases.* http://www.wjgnet.com/2150-5330/pdf/v2/i1/1.pdf Full report.

"Curcumin, also known as diferuloylmethane, is derived from the plant Curcuma longa and is the active ingredient of the spice turmeric. The therapeutic activities of curcumin for a wide variety of diseases such as diabetes, allergies, arthritis and other chronic and inflammatory diseases have been known for a long time. More recently, curcumin's therapeutic potential for preventing and treating various cancers is being recognized. As curcumin's therapeutic promise is being explored more systematically in various diseases, it has become clear that, due to its increased bioavailability in the gastrointestinal tract, curcumin may be particularly suited to be developed to treat gastrointestinal diseases. This review summarizes some of the current literature of curcumin's anti-inflammatory, anti-oxidant and anticancer potential in inflammatory bowel diseases, hepatic fibrosis and gastrointestinal cancers."

In Pancreatitis:

Wen-Guang Yu et al. 2012. *Preventive action of curcumin in experimental acute pancreatitis in mouse*. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3249972/ Full report available.

"Results: Curcumin significantly decreased the pancreas injury and reversed the elevation of serum amylase, ALT and AST activities and TNF-α level in mice with AP. Curcumin treatment inhibited the elevation of NF-κB-p65 in the nucleus of mouse pancreas AP group and RAW264.7 cells, but significantly increased the expression of PPARγ. GW9662 could abolish the effects of curcumin on serum levels of amylase, ALT, AST, TNF-α, and NF-κB level.

Interpretation & conclusions: Our results suggest that curcumin could attenuate pancreas tissue and other organ injury by inhibiting the release of inflammatory cytokine TNF-α. These effects may involve upregulation of PPARγ and subsequent downregulation of NF-κB."

Chauhan S. et al. 2012. *Antioxidants as Adjunctive Therapy for Pain in Chronic Pancreatitis*. http://www.medicine.virginia.edu/clinical/departments/medicine/divisions/digestive-health/nutrition-support-team/nutrition-articles/Parrish_March_12.pdf Full article.

Review of antioxidants in reducing pain associated with chronic pancreatitis.

Durgaprasad S. et al. 2005 *A pilot study of the antioxidant effect of curcumin in tropical pancreatitis*. Abstract only.

"RESULTS: There was a significant reduction in the erythrocyte MDA levels following curcumin therapy compared with placebo; with a significant increase in GSH levels. There was no corresponding improvement in pain.

INTERPRETATION & CONCLUSION: Oral curcumin with piperine reversed lipid peroxidation in patients with tropical pancreatitis. Further studies with large sample are needed to define its effect on the pain and other manifestations of tropical pancreatitis."

Turmeric for Pancreatitis in plain English (includes review of the few studies): http://www.turmericforhealth.com/turmeric-benefits/turmeric-for-pancreatitis

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A quick little piece by UCLA on the anti-inflammatory role of curcumin in potentially reducing inflammation of pancreatitis (2006): *Curcumin as a Treatment for Pancreatitis* http://techtransfer.universityofcalifornia.edu/NCD/NCDPDF.aspx?ncdid=20519

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