HippEvo
Hippocrates Evolution

Turmeric (*Curcuma longa) also known as curcuminoids*

Common Indications:

- Dominant use as a broad anti-inflammatory, especially for bowel and joint issues
- Strong antioxidant
- Detoxification, liver support
- Cardiovascular use: endothelial protection, cholesterol impact
- Gastrointestinal issues: IBS, ulcers, inflammatory bowel diseases
- Cancer support
- Weight loss

General Comments:

Turmeric is a classic staple of Ayurvedic medicine. It has broad application and benefit to multiple systems as an anti-inflammatory antioxidant influence.

Benefits & Mechanism of Action:

General Antioxidant & Cardiovascular Support

The phenols of turmeric/curcuminoids offer a profound antioxidant effect offering inhibition of TNF-alpha, COX-1, COX-2, LOX, IFN-γ, iNOS and NF-κB. [1-4] In Vivo studies show Turmeric/Curcumin to enhance HDL levels while reducing LDL thus enhancing the protective ratio of these lipids. Lipid peroxidation is reduced via the antioxidant effect of this valuable phenol.[5-8]

Cancer Support

Turmeric/Curcumin has an antiproliferative effect multiple types of cancer.[11-15] In studies is has demonstrated an ability to promote apoptosis in bowel and prostate cells It also has a protective impact on bowel enterocytes exposed to chemotherapy. Its use during chemotherapy is safe and beneficial to reduce side effects such as mucosal breakdown and loss of barrier function.

Gut, Liver, Detoxification

Curcumin has been shown in studies to offer a hepatoprotective effects as a free-radical scavenger. It also serves to increase glutathione levels, our primary anti-oxidant making this well suited for protection against all types of environmental toxins. Curcumin serves to enhance bile flow thus aiding digestion but also toxin removal.

Turmeric is protective of the bowel in part thru its stimulation of greater mucus production thus protective against catabolic influences from cortisol as well as the typical damage caused by NSAIDS. Its ability to increase gastrin production leads to more efficient digestion as downstream elements such as secretin, bicarb production and pancreatic enyme production are optimized.

Weight loss

Metabolic syndrome and weight gain are synonymous with inflammatory cell signals. Turmeric's ability to suppresses the transcription factor NF-kB, STAT-3, and Wnt/β-catenin while it activates PPAR-γ, Nrf2 cell signaling pathways promotes better blood sugar control and reduced inflammation. Combining this with upregulation of adiponectin and downregulation of the inflammatory signal resistin, turmeric contributes to promotion of weight loss.[23]

DOSE:

- 300-500mg of a standardized extract, 3 times a day
- Phytosome bound options offer greater absorptive rates
- Larger doses are used in cancer supportive therapy.

STANDARDIZATION:

Turmeric products should be standardized to contain 95-98% curcuminoids.

CAUTIONS & SIDE EFFECTS:

- CAUTION !! Curcumin can reduce effectiveness of some chemotherapies including: cyclophosphamide, adriamycin, camptothecin, mechlorethamine, and irinotecan.
- Safety during pregnancy and breastfeeding has not been established.
- Use caution in those allergic to turmeric or any of its constituents or to plants in the ginger (Zingiberaceae) family.

References:

GENERAL ROLE & CARDIOVASCULAR

1. Agarwal BB, Gupta SC, Sung B. Curcumin: An orally bioavailable blocker of TNF and other pro- inflammatory biomarkers. Br J Pharmacol. 2013;[Epub ahead of print].

2. Xu YX, Pindolia KR, Janakiraman N, et al. Curcumin, a compound with anti-inflammatory and anti- oxidant properties, down-regulates chemokine expression in bone marrow stromal cells. Exp Hematol 1997;25(5):413-422

3. Balogun E, Hoque M, Gong P, et al. Curcumin activates the haem oxygenase-1 gene via regulation of Nrf2 and the antioxidant-responsive element. Biochem J 2003;371(Pt 3):887-

895.

4. Bengmark S. Curcumin, an atoxic antioxidant and natural NFkappaB, cyclooxygenase-2, lipooxygenase, and inducible nitric oxide synthase inhibitor: a shield against acute and chronic diseases. JPEN J Parenter Enteral Nutr. 2006;30(1):45-51.

5. Shehzad A, Rehman G, Lee YS. Curcumin in inflammatory diseases. Biofactors. 2013;39(1):69-77.

6. Kapakos G, Youreva V, Srivastava AK. Cardiovascular protection by curcumin: molecular aspects. Indian J Biochem Biophys. 2012;49(5):306-15.

7. Zingg JM, Hasan ST, Meydamni M. Molecular mechanisms of hypolipidemic effects of curcumin. Biofactors. 2013:39(1):101-21.

8. Motterlini R, Foresti R, Bassi R, et al. Curcumin, an antioxidant and anti-inflammatory agent, induces heme oxygenase-1 and protects endothelial cells against oxidative stress. Free Radic Biol Med 2000;28(8):1303-1312.

9. Miquel J, Bernd A, Sempere JM, Diaz-Alperi J, Ramirez A. The curcuma antioxidants: pharmacological effects and prospects for future clinical use. A review. Arch Gerontol Geriatr. 2002;34(1):37-46.

10. Gupta SC, Patchva S, Aggarwal BB. Therapeutic roles of curcumin: lessons learned from clinical trials. AAPS J. 2013;15(1):195-218.

CANCER

11. Kumaravel M, Sankar P, Latha P, et al. Antiproliferative effects of an analog of curcumin in Hep-2 cells: a comparative study with curcumin. Nat Prod Commun. 2013;8(2):183-6.

12. Bharti AC, Donato N, Singh S, et al. Curcumin (diferuloylmethane) down-regulates the constitutive activation of nuclear factor-kappa B and IkappaBalpha kinase in human multiple myeloma cells, leading to suppression of proliferation and induction of apoptosis. Blood 2003;101(3):1053-1062.

13. Chaudhary LR, Hruska KA. Inhibition of cell survival signal protein kinase B/Akt by curcumin in human prostate cancer cells. J Cell Biochem 2003;89(1):1-5.

14. Di GH, Li HC, Shen ZZ, et al. [Analysis of anti-proliferation of curcumin on human breast cancer cells and its mechanism]. Zhonghua Yi Xue Za Zhi 2003;83(20):1764-1768.

15. Moragoda L, Jaszewski R, Majumdar AP. Curcumin induced modulation of cell cycle and apoptosis in gastric and colon cancer cells. Anticancer Res 2001;21(2A):873-878.

16. Robinson TP, Ehlers T, Hubbard IV RB, et al. Design, synthesis, and biological evaluation of angiogenesis inhibitors: aromatic enone and dienone analogues of curcumin. Bioorg Med

Chem Lett 2003;13(1):115- 117.

17. Sharma RA, McLelland HR, Hill KA, et al. Pharmacodynamic and pharmacokinetic study of oral Curcuma extract in patients with colorectal cancer. Clin Cancer Res 2001;7(7):1894-1900.

BOWEL HEALTH

18. Baliga MS, Joseph N, Venkataranganna MV, et al. Curcumin, an active component of turmeric in the prevention and treatment of ulcerative colitis: preclinical and clinical observations. Food Funct. 2012;3(11):1109-17.

19. Bundy R, Walker AF, Middleton RW, Booth J. Turmeric extract may improve irritable bowel syndrome symptomology in otherwise healthy adults: a pilot study. J Altern Complement Med. 2004;10(6):1015-8.

20. Van Dau N, Ngoc Ham N, Huy Khac D, et al. The effects of a traditional drug, tumeric (Curcuma longa), and placebo on the healing of duodenal ulcer. Phytomed 1998;5(1):29-34.

21. Taylor RA, Leonard MC. Curcumin for inflammatory bowel disease: a review of human studies. Altern Med Rev. 20111;16(2):152-6.

22. Prucksunand C, Indrasukhsri B, Leethochawalit M, Hungspreugs K. Phase II clinical trial on effect of the long turmeric (Curcuma longa Linn) on healing of peptic ulcer. Southeast Asian J Trop Med Public Health. 2001;32(1):208-15.

OBESITY

23. Shehzad A, Ha T, Subhan F, Lee YS. New mechanisms and the anti-inflammatory role of curcumin in obesity and obesity-related metabolic diseases. Eur J Nutr. 2011;Mar 27.