Turmeric

Latin Name: Curcuma longa

DIGESTIVE Aid; ANTI-INFLAMMATORY

Use RHIZOME
Native: SOUTH ASIA

HISTORY
1) Used 1000s of years: Spice (Curry), Coloring Agent (yellow) and Medicinal herb
2) TCM Traditional Chinese Medicine: Circulation; Digestion; Kidney discomfort
3) Ayurvedic: Anti-inflammatory; Anti-arthritic; Digestive; Liver; Skin; Wounds

QUALITIES
1) Components: Vitamin C; Curcumin (antioxidant and anti-inflammatory); Volatile Oils; Weak phytoestrogen-like component

2) DIGESTIVE; Improves Appetite; Gastric juices secretion; Stomach; Bloating; Gas; Irritable Bowel Syndrome; Ulcerative colitis; Indigestion
- STUDY (indigestion): Study to test efficacy of Curcuma rhizome for treatment of dyspepsia compared with a placebo …resulted in 87% of patients improved with treatment, 53% with Placebo. (Thamlikitkul 1989)

3) Chronic INFLAMMATION (lowers levels of enzymes that cause inflammation); Arthritis; Osteoarthritis
- STUDY (osteoarthritis): Six weeks of curcuminoid supplementation resulted in marked improvement in symptoms of knee osteoarthritis compared to the placebo. In addition, there was a significant reduction in the use of NSAID medications in the group taking curcuminoid supplements. (Panahi 2014)

4) Neuroprotective; Memory; Depression
- STUDY (depression): From weeks 4 to 8, curcumin was significantly more effective than placebo in improving several mood-related symptoms… in people with major depressive disorder. (Lopresti 2014)
- STUDY (depression): Curcumin was comparable to Prozac in its effectiveness in treating major depressive disorder. (Sanmukhani 2013)

5) Powerful Antioxidant (greater than Vit E & A); Protects against DNA Breakage

6) Heart Disease; Atherosclerosis; counters Platelet Clumping

7) Liver protective; Stimulates bile flow; Protects against Arsenic Poisoning
- STUDY (protect liver; lower lipids; antioxidant): Healthy middle-aged people given low-dose lipidated curcumin [more absorbable] were observed to have lower plasma triglyceride levels, increased blood antioxidant activities, and lower levels of liver damage markers as a result of treatment. DiSilvestro 2012

8) Lowers blood sugar balance; Diabetes
- STUDY (diabetes; atherosclerosis): 6-month randomized, double-blinded and placebo-controlled clinical trial that included subjects diagnosed with type 2 diabetes. reduced levels of: insulin resistance, triglyceride, uric acid, visceral fat and total body fat. In summary, curcumin intervention in type 2 diabetic population lowered atherogenic risks. (Chuengsamarn 2014)

9) OTHER
- Infections; Cancer prevention
- TOPICALLY: Skin Ulcers; Wounds; Eczema; Inflammations
- Kidney Stones
- Amenorrhea; Stimulates Menstruation; relieve Menstrual Discomfort)

Note: Oral curcumin is poorly absorbed. Bioavailability increases when taken with piperine (black pepper) or Bromelain.

Caution: May increase effects of Blood Thinner medications; Limit usage prior to surgery

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Turmeric References

Herb History and General Information

Blumenthal M, Goldberg A, Brinckmann J, eds., *Herbal Medicine Expanded Commission E Monographs.* Austin, TX: American Botanical Council; Newton, MA: Integrative Medicine Communications; 2000

Felter, Harvey Wickes, M.D., and John Uri Lloyd, Phr. M., Ph.D., *King's American Dispensatory;* 1898. See excerpts at http://www.henriettes-herb.com accessed July 23, 2014

Grieve, M., *A Modern Herbal, Vol I & II*. New York and London: Hafner Publishing Co.; 1967. See excerpts at www.botanical.com accessed July 22, 2014

Memorial Sloan Kettering Cancer Center. See www.aboutherbs.com accessed July 29, 2014

University of Maryland Medical Center. Turmeric. See http://umm.edu/health/medical/altmed/herb/turmeric accessed July 19, 2014

Studies

Chuengsamarn S, Rattanamongkolgul S, Phonrat B, Tungtrongchitr R, Jirawatnotai S. Reduction of atherogenic risk in patients with type 2 diabetes by curcuminoid extract: a randomized controlled trial. J Nutr Biochem. 2014 Feb;25(2):144-50. doi: 10.1016/j.jnutbio.2013.09.013. Epub 2013 Nov 6. [PubMed]

DiSilvestro RA, Joseph E, Zhao S, Bomser J. Diverse effects of a low dose supplement of lipidated curcumin in healthy middle aged people. Nutr J. 2012 Sep 26;11:79. doi: 10.1186/1475-2891-11-79. [PubMed] [Free PMC Article]

Lopresti AL, Maes M, Maker GL, Hood SD, Drummond PD. Curcumin for the treatment of major depression: a randomised, double-blind, placebo controlled study. J Affect Disord. 2014 Oct;167:368-75. doi: 10.1016/j.jad.2014.06.001. Epub 2014 Jun 11. [PubMed]

Panahi Y, Rahimnia AR, Sharafi M, Alishiri G, Saburi A, Sahebkar A. Curcuminoid treatment for knee osteoarthritis: a randomized double-blind placebo-controlled trial. Phytother Res. November 2014;28(11):1625-1631. See review by Cheryl McCutchan, PhD, Curcuminoid Supplementation Improves Knee Osteoarthritis Symptoms. HerbClip, Austin, TX: American Botanical Council. January 15, 2015 (No. 081424-512)

Sanmukhani J, Satodia V, Trivedi J, Patel T, Tiwari D, Panchal B, Goel A, Tripathi CB. Efficacy and safety of curcumin in major depressive disorder: a randomized controlled trial. Phytother Res. 2014 Apr;28(4):579-85. doi: 10.1002/ptr.5025. Epub 2013 Jul 6. [PubMed]

Thamlikitkul V, Bunyapraphatsara N, Dechatiwongse T, Theerapong S, Chantrakul C, Thanaveerasuwan T, Nimitnon S, Boonroj P, Punkrut W, Gingsungneon V, et al. Randomized double blind study of Curcuma domestica Val. for dyspepsia. J Med Assoc Thai. 1989 Nov;72(11):613-20. [PubMed]

Additional info on Studies:

OSTEOARTHRITIS

(Panahi 2014) See HerbClip Curcuminoid Supplementation Improves Knee Osteoarthritis Symptoms. January 15, 2015 (No. 081424-512)

The most common joint disease in adults, osteoarthritis (OA) is characterized by chronic joint pain, inflammation, stiffness, and limited mobility. Standard treatment is the prescription of analgesics and non-steroidal anti-inflammatory drugs (NSAIDs); however, NSAIDs are only partially effective and may cause adverse gastrointestinal, renal, and cardiovascular effects. Experimental studies have found that the curcuminoid constituents (2-5%) of turmeric (Curcuma longa, Zingiberaceae) have significant analgesic, anti-inflammatory, and antioxidant properties. Preliminary clinical evidence suggests curcuminoids may be an effective alternative or adjunct treatment for OA. In this randomized, double-blind, placebo-controlled pilot study, the effect of curcuminoid supplementation on clinical measures of knee OA symptoms was measured.

Patients under the age of 80 with mild-to-moderate knee OA (n=60) were recruited from Baqiyatallah University Clinic in Tehran, Iran. Diagnoses of knee OA were based on the clinical and radiological criteria of the American College of Rheumatology and a minimum score of 40 mm on a 100 mm visual analog scale (VAS) of joint pain. The exclusion criteria were as follows: known allergy to curcuminoids or other herbs; candidates for knee replacement or any other surgery; OA secondary to trauma; rheumatoid arthritis, inflammatory disorders, or hemophilia; malabsorption disorders; active, generalized inflammatory conditions; heart, renal, or liver

failure; history of psychological disorders; using >10 mg/day corticosteroids in the prior 3 months; and intra-articular injections in the last 3 months.

The eligible consenting patients (n=53) were consecutively randomly assigned to receive either 500 mg 3x/day (1500 mg/day) of curcuminoids (n=27; C3 Complex®; Sami Labs Ltd; Bangalore, India) or a size- and shape-matched placebo (n=26; inert starch) for 6 weeks. Each C3 Complex capsule contained 500 mg curcuminoids and 5 mg BioPerine® (Sami Labs Ltd). BioPerine is a standardized extract of black pepper (Piper nigrum, Piperaceae) and/or long pepper (Piper longum) containing at least 95% piperine, which has been shown to increase the absorption of curcuminoids. All patients were allowed to use an escape medication (naproxen) when they had intolerable pain.

Forty patients completed the study with 19 in the treatment group and 21 in the placebo group. Eight patients in the treatment group and 5 patients in the placebo group were lost to follow-up. No reasons for the losses in either group were given. All patients were taking NSAIDs at baseline. ...

Six weeks of curcuminoid supplementation resulted in marked improvement in symptoms of knee OA compared to the placebo. In addition, there was a significant reduction in the use of NSAIDs in the group taking curcuminoid supplements. The authors suggest that a plausible mechanism is the potent anti-inflammatory and antioxidant properties of curcuminoids. Curcuminoids have been shown to reduce the release of pro-inflammatory cytokines in cultured chondrocytes, increase chondrocyte survival, inhibit the production of reactive oxygen species which impair joint components, and scavenge free radicals which disrupt the cartilage matrix and promote the production of pain mediators.

Based upon the positive safety and efficacy findings in this study, the authors conclude that larger scale (Phase III) trials should be conducted to confirm the results and investigate whether the effect is independent of analgesic mechanisms. –Cheryl McCutchan, PhD

DIABETES

Curcumin reduced atherosclerotic risk factors in patients with type 2 diabetes. Chuengsamarn 2014

Chuengsamarn 2014

1Division of Endocrinology and Metabolism, Faculty of Medicine, HRH Princess Maha Chakri Sirindhorn Medical Center, Srinakharinwirot University, Nakornnayok, Thailand. Electronic address: somlukc@swu.ac.th.

2Department of Preventive and Social Medicine, Faculty of Medicine, HRH Princess Maha Chakri Sirindhorn Medical Center, Srinakharinwirot University, Nakornnayok, Thailand.

3Department of Clinical Tropical Medicine, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand.

4Department of Nutrition and Food Science, Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand.

5Department of Pharmacology, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand.

Abstract

Curcumin is a phytocompound found in the root of turmeric, a common herbal ingredient in many Asian cuisines. The compound contains anti-inflammatory activity, which is mediated through an up-regulation of adiponectin and reduction of leptin. Consumption of curcumin was shown to prevent some deteriorative conditions caused by inflammation, such as ulcerative colitis, rheumatoid arthritis and esophagitis, and so on.

Inflammation-associated cardiovascular conditions such as atherosclerosis are common in diabetes patients. The anti-inflammation effect of curcumin might be beneficial to prevent such

condition in these patients. We aim to evaluate an antiatherosclerosis effect of curcumin in diabetes patients. Effects of curcumin on risk factors for atherosclerosis were investigated in a 6-month randomized, double-blinded and placebo-controlled clinical trial that included subjects diagnosed with type 2 diabetes. An atherosclerosis parameter, the pulse wave velocity, and other metabolic parameters in patients treated with placebo and curcumin were compared. Our results showed that curcumin intervention significantly reduced pulse wave velocity, increased level of serum adiponectin and decreased level of leptin. These results are associated with reduced levels of homeostasis model assessment-insulin resistance, triglyceride, uric acid, visceral fat and total body fat. In summary, a 6-month curcumin intervention in type 2 diabetic population lowered the atherogenic risks. In addition, the extract helped to improve relevant metabolic profiles in this high-risk population.

DEPRESSION

Curcumin was significantly more effective than placebo in improving symptoms of major depressive disorder, with greater efficacy observed in individuals with atypical depression. Lopresti 2014

1School of Psychology and Exercise Science, Murdoch University, Perth, Western Australia 6150, Australia. Electronic address: a.lopresti@murdoch.edu.au.

2Impact Strategic Research Centre, School of Medicine, Deakin University, Geelong, Victoria, Australia; Department of Psychiatry, Chulalongkorn University, Bangkok, Thailand.

3School of Veterinary and Life Sciences, Murdoch University, Perth, Western Australia 6150, Australia.

4School of Psychiatry & Clinical Neurosciences, University of Western Australia, Perth, Western Australia 6009, Australia.

5School of Psychology and Exercise Science, Murdoch University, Perth, Western Australia 6150, Australia.

Abstract

BACKGROUND: Curcumin, the principal curcuminoid derived from the spice turmeric, influences several biological mechanisms associated with major depression, namely those associated with monoaminergic activity, immune-inflammatory and oxidative and nitrosative stress pathways, hypothalamus-pituitary-adrenal (HPA) axis activity and neuroprogression. We hypothesised that curcumin would be effective for the treatment of depressive symptoms in individuals with major depressive disorder.

METHODS: In a randomised, double-blind, placebo-controlled study, 56 individuals with major depressive disorder were treated with curcumin (500 mg twice daily) or placebo for 8 weeks. The primary measure was the Inventory of Depressive Symptomatology self-rated version (IDS-SR30). Secondary outcomes included IDS-SR30 factor scores and the Spielberger State-Trait Anxiety Inventory (STAI).

RESULTS: From baseline to week 4, both curcumin and placebo were associated with improvements in IDS-SR30 total score and most secondary outcome measures. From weeks 4 to 8, curcumin was significantly more effective than placebo in improving several mood-related symptoms, demonstrated by a significant group x time interaction for IDS-SR30 total score (F1, 53=4.22, p=.045) and IDS-SR30 mood score (F1, 53=6.51, p=.014), and a non-significant trend for STAI trait score (F1, 48=2.86, p=.097). Greater efficacy from curcumin treatment was identified in a subgroup of individuals with atypical depression.

CONCLUSIONS: Partial support is provided for the antidepressant effects of curcumin in people with major depressive disorder, evidenced by benefits occurring 4 to 8 weeks after treatment.

LIMITATIONS: Investigations with larger sample sizes, over extended treatment periods, and with varying curcumin dosages are required.

DEPRESSION – as effective as Prozac

Curcumin was comparable to Prozac (fluoxetine) in its effectiveness in treating major depressive disorder. Sanmukhani 2013

Department of Pharmacology, Government Medical College, Bhavnagar, Gujarat, India.

Abstract

Curcumin, an active ingredient of Curcuma longa Linn (Zingiberaceae), has shown potential antidepressant-like activity in animal studies. The objectives of this trial were to compare the efficacy and safety of curcumin with fluoxetine in patients with major depressive disorder (MDD). Herein, 60 patients diagnosed with MDD were randomized in a 1:1:1 ratio for six weeks observer-masked treatment with fluoxetine (20 mg) and curcumin (1000 mg) individually or their combination. The primary efficacy variable was response rates according to Hamilton Depression Rating Scale, 17-item version (HAM-D17). The secondary efficacy variable was the mean change in HAM-D17 score after six weeks. We observed that curcumin was well tolerated by all the patients. The proportion of responders as measured by the HAM-D17 scale was higher in the combination group (77.8%) than in the fluoxetine (64.7%) and the curcumin (62.5%) groups; however, these data were not statistically significant (P = 0.58). Interestingly, the mean change in HAM-D17 score at the end of six weeks was comparable in all three groups (P = 0.77). This study provides first clinical evidence that curcumin may be used as an effective and safe modality for treatment in patients with MDD without concurrent suicidal ideation or other psychotic disorders.

LIVER; LOWER LIPIDS; ANTIOXIDANT

Healthy middle-aged people given low-dose lipidated curcumin were observed to have lower plasma triglyceride levels, increased blood antioxidant activities, and lower levels of liver damage markers, among other health measures, in the result of the treatment. DiSilvestro 2012

Department of Human Nutrition, The Ohio State University, 345 Campbell Hall, 1787 Neil Ave, Columbus, OH 43210-1295, USA. disilvestro.1@osu.edu

Abstract

BACKGROUND: Curcumin extracts of turmeric are proposed to produce health benefits. To date, human intervention studies have focused mainly on people with existing health problems given high doses of poorly absorbed curcumin. The purpose of the current study was to check whether in healthy people, a low dose of a lipidated curcumin extract could alter wellness-related measures.

METHODS: The present study was conducted in healthy middle aged people (40-60 years old) with a low dose of curcumin (80 mg/day) in a lipidated form expected to have good absorption. Subjects were given either curcumin (N = 19) or placebo (N = 19) for 4 wk. Blood and saliva samples were taken before and after the 4 weeks and analyzed for a variety of blood and saliva measures relevant to health promotion.

RESULTS: Curcumin, but not placebo, produced the following statistically significant changes: lowering of plasma triglyceride values, lowering of salivary amylase levels, raising of salivary radical scavenging capacities, raising of plasma catalase activities, lowering of plasma beta amyloid protein concentrations, lowering of plasma sICAM readings, increased plasma myeloperoxidase without increased c-reactive protein levels, increased plasma nitric oxide, and decreased plasma alanine amino transferase activities.

CONCLUSION: Collectively, these results demonstrate that a low dose of a curcumin-lipid preparation can produce a variety of potentially health promoting effects in healthy middle aged people.

INDIGESTION

Abstract Thamlikitkul 1989

Curcuma domestica Val. is a medicinal plant. It has been claimed to be effective for dyspepsia. The studies done so far showed no toxicity due to consuming Curcuma domestica Val. The plant has been found to contain volatile oil and curcuminoids which are believed to be the active ingredients. The objective of the study was to test the efficacy of Curcuma domestica Val. rhizome for treatment of dyspepsia compared with a placebo and flatulence in a multicenter, randomized, double-blind trial carried out in one provincial and 5 community hospitals. One hundred and sixteen adult patients who had acid dyspepsia, flatulent dyspepsia, or atonic dyspepsia were included in the study. Forty-one (41) patients were in the placebo group, 36 and 39 were in the flatulence and Curcuma domestica Val. groups respectively. Each patient received 2 capsules of placebo or study drugs 4 times a day for 7 days. Each patient was then assessed for symptoms response, side effects and satisfaction. Ten patients did not participate in the follow-up. The baseline characteristics of the patients among the three groups were not significantly different. Fifty-three (53) per cent of the patients receiving placebo responded to the treatment whereas 83 per cent of the patients receiving flatulence and 87 per cent of patients receiving Curcuma domestica Val. responded to the treatment. The differences in efficacy between placebo and active drugs were statistically significant and clinically important. Mild and self-limited side effects were observed at similar frequency in the three groups. About 50 per cent of the patients in each group were satisfied with the treatment they received. (ABSTRACT TRUNCATED AT 250 WORDS)