In this edition of our newsletter we feature an article which appeared in the Natural Medicine Journal which addressed the idea that Curcumin may be of benefit for PMS (Premenstrual Syndrome).

Curcumin is well known and utilized amongst the Practitioner community and to a limited degree in the general public community.

Curcumin provides a wide spectrum of health benefits: here is a small representation of some of them (from an article written by Dr. Edward Group DC, NP, DACBN, DCBCN, DABFM on the Global Healing Center website)

8 Health Benefits of Turmeric

1. Promotes Balanced Mood
2. Helps Wounds Heal
3. Aches and Discomfort
4. Encourages Balanced Blood Sugar
5. Soothes Irritated Tissue
6. Helps Stiff Joints
7. Cholesterol Optimization
8. Ulcers

Biotics provides one formulation with included curcuminoids:

KappArest – Activates AMPK

Here is the article on Curcumin for PMS conditions from the Natural Medicine Journal.

Regards,

Rob Lamberton
India has long used turmeric in curry dishes as a taste and color enhancer. Another key reason turmeric has been used in so many cultural dishes in the East for millennia is because of its soothing properties on digestion. Researchers wanted to test the protective effects of turmeric on the lining of the stomach against acidic preparations (ethanol) used to induce stomach ulcers in test animals (representative of humans).

A preparation containing the essential oils from turmeric was administered prior to the ethanol and the results were impressive. Turmeric inhibited stomach ulcer formation by an impressive 85%. Lesions, tissue necrosis, and hemorrhaging were also greatly reduced. In addition, turmeric also appears to offer some impressive protection for stomach ailments. [14]
Curcumin and Premenstrual Syndrome

Building on evidence of mental-emotional effects of Curcuma longa

By Paul Richard Saunders, PhD, ND, DHANP, CCH

About the Author

Paul Richard Saunders, PhD, ND, DHANP, CCH, completed his PhD in forest ecology at Duke University, his naturopathic degree at Canadian College of Naturopathic Medicine, and his homeopathic residency at National College of Naturopathic Medicine, Portland, Oregon, where he also earned a second naturopathic degree. He is professor of materia medica and clinical medicine at the Canadian College of Naturopathic Medicine; senior naturopathic doctor, Beaumont Health System, Troy Hospital, Michigan; adjunct professor of integrative medicine, Oakland University William Beaumont Medical School; and has a private practice in Dundas, Ontario. Saunders was a member of the transition team that formed the Office of Natural Health Products, served as a natural health expert to the Directorate, and has served on several expert panels for Health Canada. He has conducted clinical research, supervised students and residents, and published widely.

Reference


Design

Randomized, double-blind, placebo controlled trial

Participants

Seventy female students (18-34 yo) living in the dormitories of Tehran University of Medical Sciences in 2013. They were considered healthy, had 21-35 day cycles, were single, were not taking medications, did not consume alcohol, did not smoke tobacco, and did not report any stressful events in the previous three months.

Inclusion Criteria

Participants were determined to have premenstrual syndrome (PMS) if they had at least 5 of the 19 symptoms for PMS listed in the DMS-IV.
**Exclusion Criteria**

Participants were excluded if they had side effects of any drugs, any drug allergies, any drug use, drank alcohol, smoked, had a history of drug use disorder, a disease diagnosed during the study, got married during the study, had menstrual irregularities, or had irregular bleeding events during the study.

**Instruments**

The DMS-IV PMS symptoms table was divided into mood, physical, and behavioral symptoms. The participants rated each symptom as either absent, mild, moderate, or severe with respect to daily activities for 2 cycles before receiving either the placebo or treatment intervention. PMS symptoms were rated after the first, second, and third menstrual cycles once the treatment portion of the trial began.

**Treatment**

Curcumin was obtained from Darou Pakhsh Pharma Company, Tehran, Iran. The placebo was brown sugar. Both were encapsulated in gelatin capsules by a hand machine at the Faculty of Pharmacy, Tehran University. Faculty of Pharmacy kept the code until the study was completed.

The dose was 100 mg/12 h of curcumin or placebo, given 7 days before and until 3 days after onset of menstrual bleeding.

**Results**

Of the original 70 women, 4 in placebo and 3 in curcumin did not complete the study. In the placebo group 2 got married, 1 used a drug/medication, and a fourth experienced menstrual irregularity. In the curcumin group 2 misused the curcumin capsules, and the third had menstrual irregularities.

Demographics before the study were similar by mean and standard deviation. PMS scores of physical, behavioral, mood, and total of all symptoms were also similar by mean and standard deviation before the study.

In the curcumin group, physical, behavioral, and mood PMS symptom scores decreased significantly (all \( P<0.0001 \)). In the placebo group, mean PMS physical symptom score decreased (\( P=0.0425 \)), but behavioral and mood symptoms scores did not change significantly (\( P=0.3544 \) and \( P=0.4006 \), respectively). The overall score decreased significantly in the curcumin group (\( P<0.0001 \)), but not in the placebo group (\( P=0.58 \)).
Findings

This study demonstrated that in these women, curcumin was better than placebo in significantly reducing PMS symptoms over 3 menstrual cycles based on the DMS-IV criteria.

Study Limitations

The substance used in the study was identified as curcumin, but its purity was not verified, and the presence or absence of commonly associated curcuminoids such as demethoxycurcumin, monodemethoxycurcumin, dihydrocurcumin, cyclocurcumin, and bisdemethoxycurcumin were not stated. Curcuma longa contains at least 8 curcuminoids with curcumin itself about 60% of the total root curcuminoid content.¹

The dose was 100 mg/12 hours, but it was not stated if that was taken as a single or multiple capsules, with or away from food, or at what time of day. The curcumin capsules were reported to be the same in smell, taste, shape, texture color, and size as the placebo capsules of brown sugar. This is questionable since curcumin is orange and has a distinct color and odor, while brown sugar is brown, also with a distinct odor and color. The dose of the placebo capsules was not stated.

A curcumin dose of 100 mg/12 hours is unusually low given concerns about its bioavailability. Most human studies have used doses up to or over 8 grams.¹ Mouse and rat studies often use 20-100 mg/kg equivalent.²

Commentary

Curcumin and the related bioflavonoids have demonstrated anti-inflammatory effects and neurologic effects. Curcumin also has antimicrobial, antihypertensive, antihyperlipidemic, antitumor, anticancer, antiphlogistic, antidiabetic, antipsoriasis, antithrombotic, and antihepatotoxic effects, among others.² A 2010 review article noted that its low molecular weight and polar structure allow it to penetrate the blood-brain barrier.² In animal studies it can enhance neurogenesis in the adult hippocampus, dentate gyrus region, of mice.³ It has also been shown to disaggregate beta amyloid and prevent fibril and oligomer formation associated with Alzheimer’s disease.⁴ In animal models, it is protective against amygdaloid-induced seizures (rats), iron-induced epileptic seizures (mice), and electroshock-induced seizures (mice). It has shown positive effects in animal forced swim stress and depression, reserpine-induced depression, and modulation of serotonin and dopamine.⁴ It is also protective in animal models of tardive dyskinesia.⁵

Specifically, curcumin inhibits the monoamine oxygenase (MAO)-A and MAO-B enzymes that are also involved in the degradation of norepinephrine, serotonin, and dopamine.⁵ Prolonging the action of these 3 neurotransmitters can have positive effects on mood.
Curcumin enhances the effect of fluoxetine (a selective serotonin reuptake inhibitor), bupropion (a dopamine reuptake inhibitor), and venlafaxine (a selective norepinephrine reuptake inhibitor[NRI]), but not desipramine (a tricyclic and NRI) and imipramine (tricyclic). In the mouse, serotonin and dopamine but not norepinephrine were increased. Curcumin was blocked by p-chlorophenylalanine, a tryptophan hydroxylase inhibitor. The antidepressant effect of curcumin thus involves 5-hydroxytryptamine (5-HT) 1A/1B and 5-HT 2C receptors.

A more recent mouse forced swim test with rats and a tail suspension test with mice used placebo, curcumin 50 mg/kg, curcumin 100 mg/kg, fluoxetine 20 mg/kg, imipramine 15 mg/kg, curcumin 100 mg/kg with fluoxetine 20 mg/kg, and curcumin 100 mg/kg with imipramine 15 mg/kg. The curcumin extract used in this study was not less than 95% curcumin and contained other curcuminoids and essential oils designed to increase its retention and bioavailability 7-fold. The study demonstrated that curcumin had antidepressant-like activity in mice and rats similar to fluoxetine and imipramine, but did not improve the activity of either when administered in combination. Curcumin increased neurogenesis during animal stress, probably via the hypothalamic-pituitary-adrenal axis and up regulation of 5-HT 1A receptors.

Curcumin has been used in at least 4 recent human trials for depression involving between 40 and 140 patients. Doses of curcumin ranged from 500 mg/d to 1,000 mg/d; 1 trial used 1,000 mg curcumin with 10 mg piperine. In a 5-week trial of 40 elderly patients with major depressive disorder, participants received either escitalopram (n=19) or venlafaxine (n=21) and placebo or curcumin. The curcumin group trended toward more rapid improvement, but this was not statistically significant. A trial of 56 patients with major depressive disorder received placebo or curcumin (1,000 mg/d) for 8 weeks. There was no significant difference at the end of the study. An open-label trial of a curcumin-piperine combination (1,000 mg and 10 mg, respectively) in 140 patients with major depressive disorder on antidepressants lasted 6 weeks. There were improvements in the Beck depression inventory and somatic and cognitive subscales, but not on other scales. In a 6-week trial, 60 patients with major depressive disorder were given curcumin (1,000 mg/d), fluoxetine (20 mg/d), or a combination. There were no significant differences among the groups. In none of these trials was the number and degree of adverse events different between the curcumin and the placebo or prescription medication groups. The length of the above trials is likely too short for treatment of major depressive disorder. The fact that animal studies found that curcumin did not always enhance antidepressant medications may also be a factor in the above results.

**Clinical Implications**

Curcumin has diverse neurological effects. These have been shown in mice and rats. Curcumin also has neurological effects in humans, but treatment of major depressive disorder at moderate doses (500-1,000 mg/d) may be beyond the capabilities of this herb. In a small trial of PMS, curcumin at 100 mg/12 h was more effective than placebo. Recommendations on the dose of curcumin and the constituents of *Curcuma longa* extracts for various psychological and psychiatric conditions has yet to be fully elucidated.
Use of *Curcuma longa* by naturopathic physicians for mental-emotional conditions requires attention to the individual patient, the botanical extract, and the medication(s) the patient may be taking.

References