P.O. Box 144345 Austin, TX 78714-4345 ▪ 512.926.4900 ▪ Fax: 512.926.2345 ▪ www.herbalgram.org

HerbClip™

File: ■ Chamomile (*Matricaria chamomilla* syn. *M. recutita*, Asteraceae)
■ Mefenamic Acid
■ Premenstrual Syndrome

HC 081736-584

Date: January 15, 2018

RE: Chamomile Extract More Effective than Mefenamic Acid in Relieving Psychological and Behavioral Symptoms of Premenstrual Syndrome

Sharifi F, Simbar M, Mojab F, Majd HA. Comparison of the effects of *Matricaria chamomila* [*sic*] (chamomile) extract and mefenamic acid on the intensity of premenstrual syndrome. *Complement Ther Clin Pract*. 2014;20(1):81-88.

Premenstrual syndrome (PMS) comprises a number of physical and behavioral symptoms occurring in the prior 2 weeks leading up to menses, and may continue during menses, including abdominal bloating, fatigue, breast tenderness, headache, irritability, anger, depression, increased appetite, and loss of concentration. Mefenamic acid (MA), a nonsteroidal anti-inflammatory drug, is sometimes used to treat menstrual pain; however, it is associated with adverse effects on the blood, gastrointestinal tract, kidney, and skin. Chamomile (*Matricaria chamomilla* syn. *M. recutita*, Asteraceae) has been used as a safer alternative to treat PMS symptoms. These authors conducted a prospective, randomized, double-blind trial to compare the effects of chamomile with those of MA on the intensity of PMS symptoms.

The study was conducted at Shahid Beheshti University of Medical Sciences, International Branch, in Tehran, Iran, from September 2011 to March 2012. Initially, 221 students residing in 2 dorms at Kazeroon Islamic Azad University in southern Iran were enrolled in the study. The subjects were healthy, aged 18 to 35 years, with normal body mass index and regular menstrual cycles. They were not on medication, had not undergone surgery during the previous 6 months, were not professional athletes, and were not allergic to herbal drugs. Each subject reported at least 5 symptoms of PMS according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, with at least 1 of the following: feeling sad, hopeless, or self-deprecating; feeling tense, anxious, or "on edge"; marked liability of mood, interspersed with frequent tearfulness; and persistent irritability, anger, and increased interpersonal conflicts.

The subjects completed a questionnaire about PMS symptoms daily for 2 consecutive menstrual cycles. The form included questions about 15 physical and 15 psychological, emotional, and behavioral symptoms. The severity of each daily symptom was ranked from none, mild, moderate, to severe, which created 3 groups—mild (below 33%), medium (between 33% and 66%), and severe (greater than 66%) symptoms. Of the 221 subjects enrolled in the study, 103 were excluded due to incorrect completion of the PMS symptom

form, nonconfirmed PMS, use of medications, or other unexpected events in their lives. The remaining 118 subjects were randomly divided into 2 groups of 59 students each.

In the chamomile group, each subject took one 100-mg chamomile capsule 3 times daily, starting on day 21 of their menstrual cycle until the onset of menstruation, for 2 menstrual cycles. Plants purchased from the Iran Tehran Zarband Company (Tehran, Iran) were used to prepare the chamomile extract at the School of Pharmacy Lab at Shahid Beheshti University of Medical Sciences in Tehran. The subjects in the MA group took one 250-mg MA capsule (Al-Havi Pharmaceutical Company; Tehran, Iran) 3 times daily per the same schedule used in the chamomile group. At the end of each course of treatment, the subjects were asked to complete questionnaires on the efficacy and side effects of the treatments.

Of the 118 subjects, 11 from the chamomile group were excluded from the study during the first phase because they moved from the dorms or did not return completed questionnaires. During the second phase, 3 subjects were excluded from the study because of improper use of the chamomile capsules. During the first phase in the MA group, 8 subjects were excluded because of improper use of the capsules and failure to complete the questionnaires. During the second phase, 6 subjects left the MA group because of gastrointestinal disorders and improper use of the capsules. The final analysis included 45 subjects in each group. Baseline characteristics were similar in both groups.

The authors report that reductions in overall intensity of physical and psychological symptoms after the 2 courses of treatment were significantly greater in the chamomile group than in the MA group ($P<0.05$). Looking at individual physical and psychological PMS symptoms, the authors found that MA was significantly more effective than chamomile in reducing arthralgia and muscular aches ($P=0.02$) and abdominal/pelvic pain ($P<0.001$), and chamomile was significantly more effective than MA in reducing anger and aggression ($P<0.01$). Most adverse effects reported were mild and occurred in both groups; menstrual bleeding in the chamomile group and gastrointestinal complaints in the MA group were reported as being more severe.

Although the causes of PMS have not been well established, the current thought is that PMS involves central nervous system-mediated interactions between neurosteroids and reproductive hormones. There is evidence that serotonergic activity or dysregulation is a modulator of PMS. The anti-inflammatory and pain-relieving effects produced by chamomile are reportedly due to its constituents chamazulene and alpha-bisabolol, while its effect on psychological symptoms may be due to flavonoids, specifically apigenin and luteolin, which are anxiolytic and sedative because of their binding with benzodiazepine receptors. The antiprostaglandin and pain-relieving effects of MA are effective against the physical symptoms of PMS.

Among this study's limitations are the facts that data was collected through self-report; the number of subjects was not considered when the statistical comparison for each symptom was performed; and a placebo treatment was not used. Overall, treatment with chamomile was effective in alleviating general physical symptoms similar to MA, and superior in relieving psychological and behavioral PMS symptoms.

—Shari Henson

The American Botanical Council has chosen not to reprint the original article.