Complementary Therapies in Clinical Practice 20 (2014) 81–88

Contents lists available at ScienceDirect

Complementary Therapies in Clinical Practice

journal homepage: www.elsevier.com/locate/ctcp

Comparison of the effects of *Matricaria chamomila* (Chamomile) extract and mefenamic acid on the intensity of premenstrual syndrome

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Keywords:
Chamomile
Mefenamic acid
Premenstrual syndrome

A B S T R A C T

The study aimed to compare the effects of Chamomile Extract and Mefenamic acid (MA) on the intensity of Premenstrual syndrome (PMS) symptoms.

This study was a clinical randomized double blind trial, carried out with 90 students living in the dorms of Iran. The participants filled the daily forms about the intensity of PMS for two consecutive months. Once the definitive diagnosis of PMS was made, the participants were divided into two groups, each receiving either Chamomile capsule 100 mg or MA 250 mg three times a day. Intensity reduction of emotional symptoms was significantly higher among Chamomile Extract-users (30.1 ± 26.6 and 33.4 ± 25.3 percent) than that among MA-users (11.6 ± 25.7 and 10.7 ± 26.8 percent) after two cycles intervention ($p < 0.001$). Intensity reduction of physical symptoms was not significantly different ($p > 0.05$) among groups. Consumption of Chamomile seems to be more effective than MA in relieving the intensity of PMS associated symptomatic psychological pains.

1. Introduction

Premenstrual Syndrome (PMS) is one of the common problems during child bearing age [1], experienced among 75% of the women with regular menstruation [2]. The syndrome prevalence has been recently reported to be 83.1% in some studies and 62.4% in some others [3,4]. PMS is usually associated with a periodic manifestation of some physical and behavioral symptoms prior to menses and may affect women's daily routines and work. Afterward, they remain asymptomatic for some time. The most frequent physical symptoms include abdominal bloating, fatigue, breast tenderness, and headache. Behavioral and emotional symptoms include irritability, anger, depression, increased appetite, and loss of concentration occurring within 7–10 days of menstrual cycle [2,5,6].

There is no definitive etiology for PMS and no established treatment, however, there are some recommended supportive symptom-based treatments, and hormonal therapy to suppress ovulation [2,5]. Some clinical trials have revealed that Mefenamic acid (MA) affects PMS through inhibition of the enzymes involved in prostaglandin synthesis, more significantly than placebos during the week before menstrual period [6]. This medication has vary side effects such as effects on the blood, gastrointestinal tract, kidney and skin. It should be taken 250–500 mg per 6–8 h on daily basis, however, its consumption should not exceed 7 days and should be avoided in case conditions such as hypersensitivity, peptic ulcer and gastrointestinal (GI) bleeding [6–8]. According to World Health Organization (WHO) statistics, 80% of the world population use herbal compounds [9], of which some are proven to be effective in relieving PMS associated symptoms [10].

Some reported studies indicate the efficacy of Chamomile on some conditions related to menstruation such as dysmenorrhea and PMS [11]. It is among the best, effective and widely used traditional medications [12]. FDA has classified Chamomile essential oil as non-risky and safe medicinal item. Chamomiles with

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http://dx.doi.org/10.1016/j.ctcp.2013.09.002

scientific name, *Matricaria chamomila*, belong to Compositae family which is a plant native to the Mediterranean region, but now with a wide distribution [13–15]. This medicinal plant has different constituents including Chamazulene with anti-inflammatory, antioxidant effects; Apigenin with anti-inflammatory, analgesic and antineoplastic effect; Flavonoid with anti-inflammatory, anti-anxiety effect and finally Alpha Bisabolol with anti-inflammatory and digestive effect [16].

Given the high prevalence of this syndrome [5], its symptoms and lack of an established definitive treatment for it, and considering the associated harmful adverse effects of synthetic drugs and preference for using medicinal plants including Chamomile with its analgesic, anti-inflammatory, anti-anxiety effect [10,16], and considering also menstrual problems treatment as the responsibility of midwives who play a key role in publicizing the use of herbal medicine [18], the present study seeks to determine the effect of Chamomile essential oil on PMS intensity and compare it with that of MA on the syndrome.

2. Materials and methods

2.1. Design of the study

This prospective, randomized, double blind trial was performed following the approval by the ethics committee of Shahid Beheshti University of Medical Sciences, International Branch, Tehran, Iran, under registration no116/3742 and code IRCT20120125880182N2 recorded by International Center for Registration of Clinical Trials in Iran.

2.2. Sampling method

Sampling was performed within a six month period from September 2011 to March 2012 (Fig. 1).

2.3. The participants

The study was conducted on 90 students residing in two dorms called Fatemieh and Kowsar, at Kazeroon Islamic Azad University, southern Iran. In doing so, the researcher visited the students in their separate rooms, introduced herself and explained the objectives of the study, and invited them to cooperate in the survey.

631 students were initially selected, out of whom 221 entered into the study. Then, 118 participants were randomly divided into 2 groups of 59 students based on the symptom severity.

Inclusion Criteria: The inclusion criteria were as follows: being single, age within 18–35 years, normal body mass index, regular menstrual cycle (21–35 days), with diagnosed PMS, no physical or psychological ill conditions, not on medication (hormonal, vitamins, herbal, antidepressant, aspirin, or warfarin), no history of allergy to herbal drugs, no sad event occurrence, no surgical operation during the last six months, not being a professional athlete, presence of at least five symptoms based on DSM-IV (Diagnostic and Statistical Manual of Mental Disorders-fourth

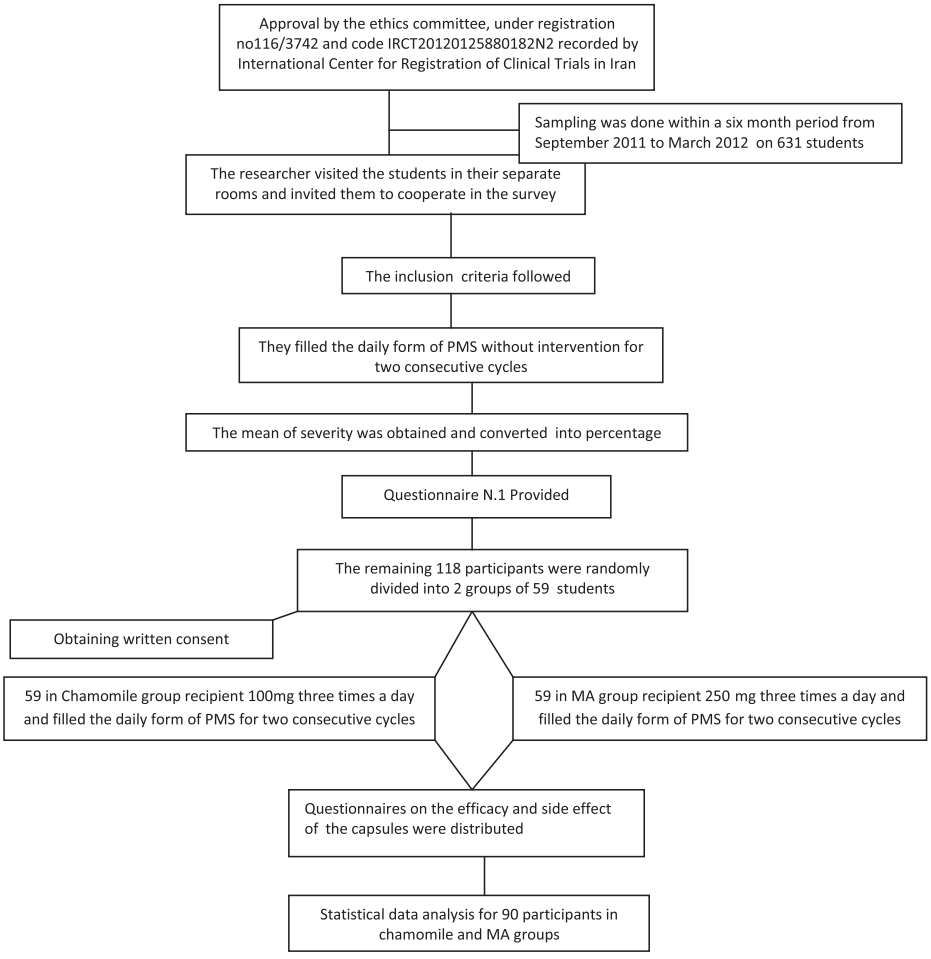

Fig. 1. The process of the study.