WCLTA-2011

Effect of Stachys lavandulifolia on fatigue, nausea and vomiting associated with primary dysmenorrhea

Ensiyeh Jenabi* , Maryam Asltoghiria, Mina Haji loomhajerana, Mojgan Torkamania

* Department of Midwifery, Toyserkan Branch, Islamic Azad university, Toyserkan, Iran

Abstract

Dysmenorrhea primary is a common symptom in women of menstrual age and it occurs between 60-93 percent of female. This symptom usually begins at the start of menstruation, continues for a few days, and is characterized by pain that radiates from the lower abdomen to the inner thighs, is usually limited to the first 48 or 72 hours of menstruation. CAM treatments for dysmenorrhea that have been studied include transcutaneous electrical nerve stimulation (TENS), acupuncture, acupressure, spinal manipulation, behavioral interventions, and herbal and dietary therapies. This study is to evaluate the therapeutic effects of Stachys lavandulifolia on fatigue, nausea, and vomiting associated with primary dysmenorrhea.

Participants were female students of Touyserkan Azad University in western Iran. The students were randomly assigned into control (40) and experimental (40) groups. Initially, the study population was requested to consume the Stachys lavandulifolia flowers at a dose of 10 gr of brewed powder three time a day and for a total of 5 days (2 days before pain to 3 days after pain), based on a common traditional administration. Later, the members of both groups were followed up for three cycles. The result showed that compared with the comparison group, the experimental group perceived less fatigue and nausea. The results of this randomized trial suggest that Stachys lavandulifolia may be an effective no pharmacologic alternative for students with primary dysmenorrhea.

© 2011 Published by Elsevier Ltd. Selection and/or peer-review under responsibility of Prof. Hüseyin Uzunboylu.

Keywords: fatigue; vomiting; nausea; primary dysmenorrhea; stachys lavandulifolia

1. Introduction

Primary dysmenorrhea is one of the most common gynecological disorders in young women and in menstrual age (Doubova et al., 2007; Kennedy, 1997).

This symptom usually begins at the start of menstruation, continues for a few days, and is characterized by pain that radiates from the lower abdomen to the inner thighs (Ohde et al., 2008).

Because no tests can confirm primary dysmenorrhea, the diagnosis is made on the basis of a patient-completed daily symptom calendar and the exclusion of other medical disorders and it occurs only in ovulatory cycles, is usually limited to the first 48 or 72 hours of menstruation, and is experienced by as many as half of all young women (Dawood, 1990).

* Corresponding author. Tel.: +98-918-111-6848; fax: +98-852-422-5353.
E-mail address: encieljenabi@yahoo.ca

Open access under CC BY-NC-ND license.
One theory is that increased prostaglandin levels produce increased myometrial contractility, uterine ischemia, and sensitization of pain fibers, which lead to pelvic pain and Women with primary dysmenorrhea have higher levels than non-dysmenorrheic women of endometrial prostaglandins F2-α and E2 and leukotrienes (Tseng, 2005).

Studies have shown that dysmenorrhea can affect adolescents’ academic performance as well as their social and sports activities (Banikarim, 2000). The efficacy of medical treatments, such as nonsteroidal anti-inflammatory drugs and oral contraceptive pills, is considerable; however, the failure rate can still be as high as 20% to 25% (Proctor, 2003). In a Swedish study, 38% of women used analgesics and 22% used oral contraceptives to alleviate their dysmenorrhea (Harel, 2006). Evidence of efficacy supports use of pharmacological agents such as NSAIDs (Wong, 2009), or the use of oral contraceptives (Sundell, 1990) to alleviate menstrual pain, however pain relief may be inadequate for some women, or side effects may not be well tolerated.

Complementary and alternative medicine (CAM) can be described as those medical systems, practices, interventions, applications, theories, and claims that are currently not part of the dominant or conventional medical system (Chez and Jones, 1997). Between 50% and 70% of Americans use some form of CAM to prevent or treat health-related problems (Astin, 1998). Surveys have shown that women are likely to be users of unconventional therapies (Tseng, 2005). Clinicians also prescribe CAM alternatives. For example, more than 90% of certified nurse-midwives in North Carolina reported advising their clients to use an alternative therapy—most commonly herbs, massage, or chiropractic care (Allaire, 2000). There has been an increase in the use of herbal medicines in the United States over the last 15 to 20 years (Tseng, 2008).

Herbal and dietary therapies are especially suitable for treatment of disorders such as dysmenorrhea, as they can be self-administered and are often easily available from shops, pharmacies, and supermarkets. CAM treatments for dysmenorrhea that have been studied include transcutaneous electrical nerve stimulation (TENS), acupuncture, acupressure, spinal manipulation, behavioral interventions, and herbal and dietary therapies (Tseng, 2005).

A recent review of seven trials evaluating the efficacy of herbal and dietary therapies in primary and secondary dysmenorrhea showed that vitamin B1 taken at 100 mg daily may be an effective treatment for dysmenorrhea (Proctor and Murphy, 2003).

A study of 706 Hispanic female adolescents found that participants with dysmenorrhea reported using multiple treatments to relieve their symptoms: rest (58%), medications (52%), heating pad (26%), tea (20%), exercise (15%), and herbs (7%) (Allaire et al., 2000).

In one study in Iran, was showed that women more efficacy with use herbal drugs in comparison with drug mefenamic acid in pain relief (Khodakarami et al., 2009).

Stachys lavandulifolia is plant that grows in mountain places. In Iran, it grows in Alvand Mountain in Hamedan State; too it grows in Gilan, Azerbaijan and Alborz mountains. The people in this places use it for relief of different pains. The studies were showed that the mechanism of effect of Stachys lavandulifolia is prostaglandins suppress (Zargari, 2010).

Only a study was performed about affect of treatment this plant that it is study of Olfati and et al. in 2011. They showed that use of Stachys lavandulifolia was cause of decrease fatigue and nausea in primary dismenorrhea, but vomiting no decreased (Olfati et al., 2011).

This study is to evaluate the therapeutic effects of Stachys lavandulifolia on fatigue, nausea, and vomiting associated with primary dysmenorrheal in Iran.

2. Materials and methods

Participants were female students of Touyserkan Azad University in western Iran. The students were randomly assigned into control and experimental groups.

The Visual Analog Scale for fatigue, nausea and vomiting was distributed for female students. The VAS consists of a 10-cm horizontal scale with the descriptors “no problem” on the left and “worst possible problem” on the right. Participants were asked to place a mark on the 10-cm line at a point that corresponded to the level of pain intensity they felt. The distance in centimeters from the low end of the VAS to the participant’s mark was used as a numerical
index for the severity of fatigue, nausea and vomiting. The criteria for participating in the study included 1) dysmenorrhea with pain scoring higher than 3 on the VASP (range 0–10), and 2) agreement to participate after reading an informed consent document. The Research Ethical Committee of the participating institution approved the study’s protocol informed consent.

The students were randomly assigned into comparison (40) and experimental (40) groups. Initially, the study population was requested to consume the Stachys lvandulifolia flowers at a dose of 10 gram of brewed powder three times a day and for a total of 5 days (2 days before pain to 3 days after pain), based on a common traditional administration. Later, the members of both groups were followed up for three cycles. Participants in the comparison group no received.

The questionnaire included demographic data and the following three instruments (for fatigue, nausea and vomiting) were used to measure the outcome variables. Participants completed questionnaires in a private area.

Power analysis was used to determine the sample size. Sample of 35 per group was needed to achieve a power of 0.80 with an alpha of .05. Therefore, 40 women of experimental group and 40 of comparison group were randomly selected and approached for the study, this allowed for 10% attrition rates.

SPSS (SPSS Inc., Chicago IL) statistical software was used for data analysis. All hypothesis tests were two-sided and P-values<.05 were considered statistically significant. Wilcoxon Test was used to evaluate fatigue, nausea and vomiting in two groups.

### 3. Results

A total of 40 experimental and 40 comparison subjects completed the 4 assessments. The mean age for the experimental group was 21.98 (SD = 0.78) and for the control group was 22.01 (SD = 0.67). These mean ages are no significantly different (\(P > .05\)).

The most of women were housewife in two groups of intervention and comparison.

The subjects’ other demographic characteristics are presented in Table 1. No significant differences between the two groups were found in terms of the other characteristics.

| Characteristics | comparison (n=40) (%) | Intervention (n=40) (%) |
|-----------------|-----------------------|------------------------|
| Mens Interval   | (85)34 (15)16         | (80)37 (20)18          |
| Use of relief   | (22.5)9 (52.5)21      | (27.5)11 (50)20        |
| Disturbance in daily function | (25)10 | (22.5)9 |
| Place of Referral for treatment | (30)12 (20)18 (25)10 | (27.5)11 (42.5)17 (30)12 |
| Physician       | (22.5)9 (20)8         | (20)8                  |
| Midwife         | (67.5)23              | (62.5)25               |

Fisher’s exact test, \(p \geq 0.05\).

Table 2 presents a comparison of the means and standard deviations for each of the measures and their subscales during pretest, 1 month posttest and 3 months posttest.

In this study, fatigue and nausea after of Stachys lvandulifolia use in comparison with placebo group was less and this correlation was significant. Nausea in two groups no was significant correlation (table 2).
Table 2: Primary symptoms' in two groups of intervention and comparison

| P      | Comparison group (n=40) | Intervention group (n=40) |  
|--------|-------------------------|---------------------------|
|        | Before of study         |                           |  
| 0.94†  | 4.90±1.34               | 4.32±1.11†                | Nausea
| 0.01   | 4.73±1.36               | 3.59±1.22                 | Before of study 1 mounth
| 0.001  | 4.39±1.10               | 2.01±1.94                 | 3 mounth
| 0.62   | 5.79±2.15               | 5.78±2.39                 | Fatigue
| 0.001  | 5.10±1.80               | 3.72±1.82                 | Before of study 1 mounth
| 0.001  | 5.04±1.60               | 3.13±1.81                 | 3 mounth
| 0.95   | 2.71±2.80               | 2.71±2.31                 | Vomiting
| 0.07   | 1.80±2.84               | 1.73±2.43                 | Before of study 1 mounth
| 0.06   | 1.88±2.38               | 1.71±2.34                 | 3 mounth

*Mean± standard deviation of the difference
×Wilcoxon’s rank-sum tes.

4. Discussion

The results of this randomized trial suggest that Stachys lvandulifolia tea may be an effective non-pharmacologic alternative for students with primary dysmenorrhea, with evidence of symptom improvement 1 month after beginning the treatment.

In studies were showed that effect anti inflammation of Stachys lvandulifolia was similar to high dose of Indometacin drug, of course this studies performed in Rat and for extension it to human require to more studies (Khanavi et al., 2005).

In study of Olfati and et al. in 2011 was showed that use of Stachys lvandulifolia was cause of decrease fatigue and nausea in primary dismenorrhea, but vomiting no decreased (Olfati et al., 2011). Our result is similar to it.

Our study has several limitations. Because the study’s outcomes were largely subjective and measured by self-report questionnaires, it is possible that Stachys lvandulifolia tea has only a placebo effect on menstrual discomfort. The participants in the experimental group were in comparison with a research assistant once a week for a 3 month period.

In our protocol, the participants in the experimental group drank 2 teacups of Stachys lvandulifolia for 12 days every month. According to the perspective of traditional Chinese medicine, women should avoid cold food from the premenstrual through the menstrual period (proctor and Murphy, 2001; Kennedy, 1997).

Chinese culture suggests that hot drinks are good for menstrual pain, but no scientific research supports this claim.

During the 3-month follow up period, participants don’t report effect complications and change in duration and amount of menstruation bleeding.

We propose duplication of this study in other countries to test the feasibility and effectiveness of Stachys lvandulifolia therapy and with sample size of high.

5. Acknowledgments

We would like to thank president and vice president of research of Islamic Azad University, Toyserkan Branch for their cooperation in this survey.

We thank of nursing and midwifery students of Islamic Azad university of Toyserkan in state of Hamedan for their assistance in this study.
References

Allaire Ad, Moos MK, Wells SR. Complementary and alternative medicine in pregnancy: A survey of North Carolina certified nurse-midwives, *Obstetrics Gynecology* 2000;95 : 19–23.

Astin JA. Why patients use alternative medicine: Results of a national study, *JAMA* 1998; 279: 1548–1553.

Banikarim C, Hacko MR, Kelder SH. Prevalence and impact of dysmenorrhea on Hispanic female adolescents. *Arch Pediatric Adolescent Medicine* 2000; 154 :1226–29.

Bareire I, Daberte I, Zvirgzdina L, Iriste V. The complex technology on products of German Chamomile. Medicine 2003; 39:127.

Chen HM, Chen CH. Effects of acupressure at the Sanyinjiao on primary dysmenorrhea, *J Adv Nurs* 2004; 48: 380–387.

Chez RA, Jonas WB. Complementary and alternative medicine. II. Clinical studies in gynecology. *Obstetrics Gynecology Survey* 1997; 52: 709–16.

Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav* 1983; 24: 385–396.

Dawood MY. Dysmenorrhea. *Clin Obstet Gynecol* 1990; 33: 168–178.

Proctor ML, Hing W, Johnson TC, Murphy PA. Spinal manipulation for primary and secondary dysmenorrhea, *Cochrane Database System Review* 2003: 3.

Doubova, S.V., Morales, H.R., Hernández, S.F., Martínez-García, M.C., Ortiz, M.G., Chávez-Soto, M.A., Arce, E.R. and Lozoya, X. Effect of a *Psidii guajave* folium extract in the treatment of primary dysmenorrhea: a randomized clinical trial. *J. Ethnopharmacol.* 2007;110: 305–310. Gift AG. Visual analogue scales Measurement of subjective phenomena, *Nurs Res* 1989; 38: 286–288.

Harel Z. Dysmenorrhea in adolescents and young adults: etiology and management. *Journal of Pediatric and Adolescent Gynecology*. 2006;19(6):363–371.

Kennedy S. Primary dysmenorrhea. *Lancet* 1997; 349(9059):1116.

Khanavi M, Sharifzadeh M, Hadijakhondi Z, Shafiee A. Antiinflammatory activity of aerial part of Stachys byzanthina. *C Koch* 2005; 97(3): 475-9.

Khodakarami et al. The effect of an Iranian herbal drug on primary dysmenorrhea: a clinical controlled trial. *J midwifery womans Health* 2009 Sep-Oct; 54(5):401-4.

Melzack R. The McGill pain questionnaire Major properties and scoring methods, 1975; 1: 277–299.

Ohde S, Tokuda Y, Takahashi O, Yanai H, Hinohara S, Fukui T. Dysmenorrhea among Japanese women. International journal of gynecology and obstetrics 2008;100:13-17.

Olfati F, Sadeghi T, Azarbaijani S, Hadizadeh M, Haj-Seied Javadi E. Effect of Stachys Lavandulifolia on fatigue, nausea and vomiting associated with primary dysmenorrhea. Journal of ghazvin university of medical science 2011; 15(1):15-20.

Proctor ML, Smith CA, Farquhar CM, Stones RW. Transcutaneous electrical nerve stimulation and acupuncture for primary dysmenorrhea, *Cochrane Database System Review* 2003: 3.

Proctor ML, Murphy PA. Herbal and dietary therapies for primary and secondary dysmenorrhea. *Cochrane Database System Review* 2003: 3.

Sundell G, Milsom I, Andersch B. Factors influencing the prevalence and severity of dysmenorrhoea in young women. *British Journal of Obstetrics and Gynaecology*. 1990;97(7):588–594.

Tseng YF, Chen CH, Yang YH. Rose tea for relief of primary Dysmenorrhea in adolescents: A randomized controlled trial in Taiwan. Journal of Midwifery and womens health 2005;50:51-7.

Wong CL, Farquhar C, Roberts H, Proctor M. Oral contraceptive pill as treatment for primary dysmenorrhoea. *Cochrane Database of Systematic Reviews*. 2009;(2) Article ID CD002120.

Zargari A. Medicinal plants Tehran. 2th ed. Tehran University2010: 651.