

Effect of *Mentha Longifolia* on 10 Patients with Primary Dysmenorrhea

Pantea Shirooye (M.D., Ph.D.)¹, Shahrbanoo Abdolhosseini (M.D., Ph.D.)^{2*}

¹ Ph.D. of Traditional Medicine, Department of Traditional Medicine, School of Traditional Medicine,
Shahid Beheshti University of Medical Sciences, Tehran, Iran

^{2*} Ph.D. Candidate of Traditional Medicine, Department of Traditional Medicine, School of Traditional Medicine,
Kerman University of Medical Sciences, Kerman, Iran

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ABSTRACT

Background: Dysmenorrhea which means menstrual pain is the most common complaint in women and is one of the problems of health care. Iranian Traditional medicine (ITM) considers dysmenorrhea as Osre-Tams and *Mentha Longifolia* has been indicated as one of the plants that is effective for its treatment. The objective of this study is to evaluate the effect of *Mentha Longifolia* on patients with severe dysmenorrhea.

Case Presentation: Ten female students with severe dysmenorrhea and cold and wet uterine temperament participated in the study. In this study, the pain intensity was evaluated in the first menstrual cycle without intervention. Thereafter, patients used *Mentha Longifolia* herbal tea for two consecutive cycles from two days before until the first three days of menstruation and pain intensity of both cycles was evaluated. Pain intensity of all patients was reduced at the end of the study. Pain intensity was reduced from severe to low in 9 patients and it reduced from severe to moderate in one patient. Moreover, there was no exclusion in this study and only one side effect was reported in the form of constipation and one case in the form of increasing bleeding.

Conclusion: In this study, *Mentha Longifolia* reduced the severity of dysmenorrhea. One of the causes of Osre-Tams in ITM is the blood concentration of phlegm and black-bile. Based on ITM texts, *Mentha Longifolia* is an emenagogue and moshil of sauda. So, it increases menstrual blood flow and reduces menstrual pain. Results of this study confirm the principles of ITM and demonstrate that ITM can improve public health.

Keywords: Dysmenorrhea, Osre-Tams, *Mentha Longifolia*, Menstruation, Iranian Traditional Medicine

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Corresponding Author:

Shahrbanoo Abdolhosseini (M.D., Ph.D.). Address: Department of Traditional Medicine, School of Traditional Medicine, Kerman University of Medical Sciences, Kerman, Iran. Zip Code: 7615687134. E-mail address: sh-abdolhosseini@razi.tums.ac.ir



Introduction

Dysmenorrhea which means painful menstruation is one of the most common cyclic pain and complaint in women. Dysmenorrhea is divided into primary and secondary types based on the presence or absence of pelvic pathology [1-2]. Primary dysmenorrhea occurs in normal cycles without any pelvic pathology [2-3]. Primary dysmenorrhea is a colic pain in the suprapubic and lumbosacral regions [1-2] which occurs a few hours before the start of menstruation or at the time of menstruation and continues for 48 to 72 hours [1-2]. The prevalence of Primary dysmenorrhea in Iran is 73.2% [4]. Primary dysmenorrhea has many psychological and economic consequences. A number of 53 to 66% of affected women have activity limitations and 16.5 to 42.1% of them are forced to be absent from work or school [6] and this is one of the confounding factors in women's quality of life [7]. The first-line treatment of primary dysmenorrhea is nonsteroidal anti-inflammatory Drugs (NSAIDs) [1-2] which has lack of response to treatment in 20 to 25% of cases [8-9]. On the contrary, the use of NSAIDs is prohibited in peptic ulcers and severe bronchospastic reaction to aspirin [1]. Also, the consumption of NSAIDs in 15 to 16% of cases is associated with side effects like nausea [1], vomiting, heartburn [10], gastrointestinal bleeding [11], fatigue [1], confusion [11], sleepiness [2], headache [10], chronic renal failure, liver failure, thrombocytopenia, hemolytic anemia and angioedema [11]. So an alternative treatment with less toxicity is expected in the treatment of primary dysmenorrhea [12]. Iranian Traditional Medicine (ITM) with long-term successful clinical evidences on human can offer effective solutions [3, 11]. The word of Osre-Tams has been employed in the references of Iranian traditional medicine for menstrual pain [13-18]. Moreover, Osre-Tams has been indicated as one of the causes of uterine pain in Iranian Traditional Medicine. Different methods of drug application and different plants have been mentioned in ITM references to treat the uterine pain [20-26]. On the one hand, according to

studies, women tend to use herbal medicines in the treatment of diseases like dysmenorrhea [7]. One of plants that is effective on uterine pain is Poudanj or Foudanj in ITM [22, 26]. That its scientific name is *Mentha longifolia* [27] and is related to Lamiaceae (Labiatae) family and its habitat is Southeast Asia [28]. Regarding the effectiveness of *Mentha longifolia* on uterine pain according to ITM and its availability, low cost and the fact that it is native to Iran, we attempted to evaluate the effect of *Mentha longifolia* on patients with severe dysmenorrhea.

Case Presentation

Medical History and Examination according to Modern Medicine

Ten female students aged 19 to 25 in Tehran with body mass index less than 35, regular menstruation and severe menstrual pain according to Verbal Multidimensional Score (Grade III) enrolled in the study based on verbal multidimensional index, rejection of secondary dysmenorrhea based on history and ultrasound, lack of history of stress in the last six months (separation of parents and death of relatives) and lack of using other medicines. Verbal multidimensional Score is an index for measuring pain based on which pain severity of dysmenorrhea is divided into 4 grades (grade zero: people with no menstrual pain. Grade I: People with painful menstruation who hardly ever need painkiller and their activities are hardly ever limited. Grade II: People whose daily activity are affected by dysmenorrhea and need painkiller. Grade III: People whose daily activity are clearly limited by dysmenorrhea and cannot be relieved with painkillers and alongside symptoms such as headache, fatigue, vomiting and diarrhea). Exclusion criteria include lack of proper use of drug, need for other interventions, the incidence of severe side effects and possible personal bias.

Medical History and Examinations according to Iranian Traditional Medicine

The temperament of uterine of patients was initially evaluated using uterine temperament questionnaire [29] and it was determined that all of the patients have cold and wet temperament.

Patients were not too familiar with the six essential facts (six principles of maintaining health) in ITM. Moreover, the patients were not recommended to follow health and nutrition care principles.

Treatment

Measures to Protect Health and Nutrition:

Measures to protect health and nutrition was not performed for these patients.

Pharmaceutical Measures:

In order to prepare the medicine for research, dried leaf of *Mentha longifolia* was initially prepared from producers of medicinal herbs in Tehran and it was packaged and given to patients. Patients were required to pour a cup (250 ml) of boiling water onto a teaspoonful (2 g) of dried *Mentha longifolia* leaf and drink after 5 minutes [30]. *Mentha longifolia* herbal tea was freshly prepared and consumed three times a day.

Severity of dysmenorrhea was initially evaluated by visual analogue scale (VAS) in the first cycle without drug intervention a day before the start of menstruation until the first three days of menstruation (VAS is a measure of evaluating pain intensity in which patients mark their pain on a 100 mm horizontal line from zero to ten in which zero means without pain and 10 means maximum pain. Zero to 3 represent mild pain, 3 to 7 represent moderate pain and 7 to 10 represent severe pain [31]). On the contrary, each patient was given 12 capsules of 250 mg Mefenamic acid and they were allowed to use one capsule every 8 hours in case of having pain and the number of capsules consumed by each patient in this cycle was recorded. Then, patients received *Mentha longifolia* herbal tea for two consecutive cycles. They used *Mentha longifolia* herbal tea two days before menstruation until the third day of menstruation three times a day. Pain intensity was also evaluated in these two cycles based on VAS from one day before menstruation until the first three days of menstruation. In both cycles, 12 capsules of 250 mg Mefenamic acid were given and they were allowed to use one capsule one hour after using research drug in case of having pain

and after marking VAS pain intensity scale and they can repeat it every 8 hours if necessary. Number of used Mefenamic Acid capsules was recorded in each cycle.

Treatment Results

Pain intensity was severe in all patients in this study in the first cycle ($7 \geq \text{VAS} > 10$). At the end of the study, Pain intensity was reduced from severe to mild in 9 patients (90%) ($\text{VAS} < 3$) and it reduced from severe to moderate in one patient (10%) ($3 \geq \text{VAS} > 7$). The average use of Mefenamic acid was 2 capsules in the first cycle which was reduced to 0.5 per cycle at the end of the study. Thus, the use of Mefenamic acid was significantly reduced. In this study, only one side effect was reported in the form of constipation and one case in the form of increasing bleeding menstruation that both of whom continued the study. There was also no exclusion in this study.

Discussion

This study evaluated the effect of *Mentha longifolia* on primary dysmenorrhea and demonstrated that *Mentha longifolia* herbal tea is effective for the treatment of severe primary dysmenorrhea. Study of Mokaberinezhad et al. in 2012 on the effect of *Mentha longifolia* syrup on 120 patients with secondary amenorrhea reported two cases of dysmenorrhea pain reduction as a desirable side effect [28]. In the study of Mokhtari et al. in 2009, hydro-alcoholic extract of *Mentha longifolia* reduced pain induced in rats [32]. Findings of this study confirm the principles of traditional medicine regarding the effectiveness of *Mentha longifolia* on uterine pain [22, 26]. Also as a law in ITM, emenagogue drugs are effective in the treatment of Osre-Tams [14, 20, 22, 25, and 33] due to inducing better menstrual blood flow and *Mentha longifolia* is an emenagogue from the perspective of ITM. On the other hand, one of the rules of ITM is counter treatment [34-35]. In our study, *Mentha longifolia* with hot and dry temperament treated all patients with cold and wet uterine temperament. One of the causes of Osre-Tams in ITM is the blood concentration of sputum

phlegm (balgham) and black-bile (sauda) [14, 18]. Based on ITM texts, *Mentha longifolia* is molattif and moshil of sauda. So, *Mentha longifolia* solves the blood concentration of sauda [23-24]. Also *Mentha longifolia* with its dry temperament [23-24] can provide the justification for constipation reported in this study. On the other hand, *Mentha longifolia* is an emenagogue which can provide the justification for increased menstrual bleeding reported in this study.

Conclusion

This study examined the efficacy of *Mentha longifolia* on severe primary dysmenorrhea and stated that *Mentha longifolia* reduces severity of the pain in severe primary dysmenorrhea. Results of this study confirm the principles of ITM and demonstrate that ITM can improve public health.

List of Abbreviations

ITM: Iranian Traditional Medicine

VMS: Verbal Multidimensional Score

VAS: Visual Analogue Scale.

Competing Interests

The authors have no conflict of interest in the publication of this article.

Contributing Authors

This article is the outcome of treatment measures by EA, RM, HT and cooperated in documenting and writing the article.

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