

Phytotherapy and Medicinal Plants in the Treatment of Dysmenorrhea: A Systematic Review Study in Iranian Ethnobotanical Documents

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Abstract

Dysmenorrhea is an unusual pain in the abdomen during menstruation. Women experience pain in the lower abdomen and uterus during menstruation, but if the pain is too much to stop daily activities, it is called dysmenorrhea or painful menstruation. Chemical treatments for dysmenorrhea are usually associated with side effects. Gastrointestinal problems, nausea, blurred vision, headache, and dizziness are some of the side effects of medications used to treat dysmenorrhea. Today, the use of herbal remedies and traditional medicine has become common. In this systematic review study, the most important medicinal plants mentioned for dysmenorrhea in Iranian ethnobotanical documents were extracted and reported. In this review study, keywords such as dysmenorrhea, medicinal plants, ethnobotany, identification of medicinal plants, region and Iran from databases including ISI, Web of Science, PubMed, Scopus, ISC, Magiran and Google Scholar to review articles and Resources used. Based on the obtained results, medicinal plants *Foeniculum vulgare* Mill, *Juniperus communis*, *Origanum vulgare*, *Salvia sclarea* L., *Urtica dioica* L., *Anthemis cotula* L., *Carthamus lanatus* L., *Silybum marianum* [L.] Gaerth., *Anthriscus cerefolium* L. [Hoffm.], *Vitex pseudonegundo*, *Parietaria judaica* L., *Achillea biebersteinii* Afanasiev., *Equisetum arvense* L., *Phoeniculum vulgare* Mill. *daenensis* Celak., *Peganum harmala* L., *Trifolium repens* L., *Salix aegyptiaca* L., *Nepeta fassenii*, *Cicer kermanenses*, *Teucrium pollium* L., *Achillea santolina*, *Cuminum cyminum*, *Valeriana officinalis*, *Salvia macrosiphon*, *Achillea eriophora*, which are medicinal plants. They are used in different regions of Iran to treat dysmenorrhea.

Keywords: Gynecological diseases, Dysmenorrhea, Medicinal plants, Ethnobotany, Iran

Introduction

Dysmenorrhea by definition means unusual pain in the abdomen during menstruation. Usually 50 to 70% of women experience pain in the lower abdomen and uterus during menstruation, but if the pain is too much to stop daily activities, it is called dysmenorrhea or

painful menstruation [1]. Dysmenorrhea causes many problems in the individual and social life of women and causes them to be absent from work and education [1]. Dysmenorrhea is one of the most common causes of gynecological disorders. This problem is most often seen with menstrual periods associated with ovulation. Patients may experience other symptoms such as nausea, vomiting, headache, dizziness, and bloating. There is also the possibility of diarrhea [2]. In the clinic, dysmenorrhea is divided into primary and secondary groups. Primary dysmenorrhea is the presence of painful menstruation in the absence of provable pelvic disease and secondary

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and the occurrence of painful menstruation due to pathological pelvic problems [3]. Dysmenorrhea has a prevalence of 3 to 90% among women [4]. Non-steroidal anti-inflammatory drugs [NSAIDs], oral contraceptive pills, prostaglandin inhibitors such as propionic acid and phenytoin, exercise and heat and complementary medicine, and herbal remedies are some of the most important ways to control and treat dysmenorrhea [5]. Chemical treatments for dysmenorrhea are usually associated with side effects. Gastrointestinal problems, nausea, blurred vision, headache and dizziness are some of the side effects of drugs used to treat dysmenorrhea [6]. In the last decade, there has been a significant increase in the use of herbal medicines and complementary medicine in different parts of the world, especially in Iran [7-11]. Medicinal plants have a variety of medicinal effects [9-11]. Because medicinal plants due to their active ingredients and medicinal and antioxidant compounds have beneficial effects on human health and have a therapeutic effect on various organs of the body and various diseases [12-20]. In this study, a systematic review was attempted to extract and report from the most important medicinal plants mentioned for dysmenorrhea in Iranian ethnobotanical documents.

Method

In the present review study, the most important applied medicinal plants in ethnobotanical knowledge of Iran have been studied and reported. For this purpose,

keywords such as dysmenorrhea, medicinal plants, ethnobotany, identification of medicinal plants, region and Iran were performed. Databases such as ISI Web of Science, PubMed, Scopus, ISC, Magiran and Google Scholar were used to review articles and resources. In this study, 50 articles were searched and found. 4 articles also lacked full text. There were two duplicate articles that were removed from the total number of articles. Finally, 44 articles were reviewed to review the texts. Out of 40 articles, only 17 articles contained ethnobotanical information for dysmenorrhea.

Results

Medicinal plants *Foeniculum vulgare* Mill., *Juniperus communis*, *Origanum vulgare*, *Salvia sclarea* L., *Urtica dioica* L., *Anthemis cotula* L., *Carthamus lanatus* L., *Silybum marianum* [L.] Gaerth., *Anthriscus cerefolium* L. [Hoffm.], *Vitex pseudonegundo*, *Parietaria judaica* L., *Achillea biebersteinii* Afanasiev., *Equisetum arvense* L., *Phoeniculum vulgare* Mill. *daenensis* Celak., *Peganum harmala* L., *Trifolium repens* L., *Salix aegyptiaca* L., *Nepeta fassenii*, *Cicer kermanenses*, *Teucrium pollium* L., *Achillea santolina*, *Cuminum cyminum*, *Valeriana officinalis*, *Salvia macrosiphon*, *Achillea eriophora*, are medicinal plants that are used in different parts of Iran. Used to treat dysmenorrhea. Additional information in this regard, medicinal plants, scientific name, plant family name, area used, organ used and its main active ingredients are specified in Table 1

Table 1. Scientific name, plant family name, local name, organ used and area of use of medicinal plants affecting dysmenorrhea

Scientific name	Herbal family	common name	Used part[s]	Region
<i>Foeniculum vulgare</i> Mill.	Apiaceae	Rajuoneh	Stem	Arzhan of fars [21]
<i>Juniperus communis</i>	Cupressaceae	Pirou	Fruit	Arasbaran [22]
<i>Origanum vulgare</i>	Labiatae	Marzanjoush	Aerial organs	Arasbaran [22]
<i>Salvia sclarea</i> L.	Labiatae	Maryangoli	Flowering branch	Arasbaran [22]
<i>Urtica dioica</i> L.	Urticaceae	Gazaneh	Leaves	Arasbaran [22]
<i>Anthemis cotula</i> L.	Asteraceae	Babouneh bahari	Flower	Bushehr [23]
<i>Carthamus lanatus</i> L.	Asteraceae	Golrang moghadas	Aerial organs	Bushehr [23]

Cont... Table 1. Scientific name, plant family name, local name, organ used and area of use of medicinal plants affecting dysmenorrhea

<i>Silybum marianum</i> [L.] Gaerth.	Asteraceae	Kharmaryam	Aerial organs	Bushehr [23]
<i>Anthriscus cerefolium</i> L. [Hoffm.]	Apiaceae	Jafari	Aerial organs	Behbahan [24]
<i>Thymus kotschyanus</i>	Lamiaceae	Avishan	Aerial organs	Behbahan [24]
<i>Vitex pseudonegundo</i>	Verbenaceae	Panjangosht	Aerial organs	Behbahan [24]
<i>Parietaria judaica</i> L.	Urticaceae	Marzangoush	Aerial organs	Dastena [25]
<i>Achillea biebersteinii</i> Afanasiev.	Asteraceae	Boumadaran zard	Aerial organs	Dastena [25]
<i>Equisetum arvense</i> L.	Equisetaceae	At gulu	Aerial organs	Zanjan [26]
<i>Foeniculum vulgare</i> Mill.	Apiaceae	Razianeh	Leaves and Seeds	Sistan [27]
<i>Ducrosia anethifolia</i>	Apiaceae	Moshgak	Inflorescence	East of persian gulf [28]
<i>Eremurus persicus</i>	Xanthorrhoeaceae	Serish	Roots and leaves	East of khuzestan [29]
<i>Ducrosia anethifolia</i>	Apiaceae	Moshgak	Flower	Fasa [30]
<i>Foeniculum vulgare</i>	Apiaceae	Razianeh	Fruit	Fasa [30]
<i>Achillea wilhelmsii</i>	Asteraceae	Boumadaran	Aerial organs	Fasa [30]
<i>Marrubiumsupinum</i> L.	Lamiaceae	Pouneh kouhi	Flowering branch	Fasa [30]
<i>Thymus daenensis</i> Celak.	Lamiaceae	Avishan bargbarik	Leaves	Fasa [30]
<i>Peganum harmala</i> L.	Zygophyllaceae	Espan	Aerial organs	Fasa [30]
<i>Trifolium repens</i> L.	Fabaceae	Shabdare ghermez	Leaves	Kazeroun [31]
<i>Salix aegyptiaca</i> L.	Salicaceae	Bidmeshk	Flower	Mashhad [32]
<i>Nepeta fassenii</i>	Lamiaceae	Pounehasa	Flowering shoot	Abadeh of shiraz [33]
<i>Cicer kermanenses</i>	Lamiaceae	Nokhod kermani	Seeds and Fruit	Jupar of kerman [34]
<i>Teucrium pollium</i> L.	Lamiaceae	Calpoureh	Leaves and seeds	Hormozgan [35]
<i>Achillea santolina</i>	Asteraceae	Berenjdas	Flowering shoot	Mobarakeh of Isfahan [36]
<i>Cuminum cyminum</i>	Apiaceae	Zire sabz	seeds	Mobarakeh of Isfahan [36]
<i>Valeriana officinalis</i>	Valerianaceae	Sonboloteib	Roots	Mobarakeh of Isfahan [36]
<i>Salvia macrosiphon</i>	Lamiaceae	Merik	Roots and seeds	Sirjan of kerman [37]
<i>Achillea eriophora</i>	Asteraceae	Boumadaran jonoub	Leaves and Flowering branch	Sirjan of kerman [37]

Discussion

Dysmenorrhea is one of the most common reasons for women to visit a gynecologist. Dysmenorrhea is caused by impaired painful uterine contractions before or during menstrual bleeding resulting in the release of prostaglandins in the absence of any pelvic pathological factors. In the knowledge of ethnobotany and traditional medicine of different societies, medicinal plants have been used to control pain and treat diseases. Today, in addition to the use of chemical drugs, medicinal plants are also used.

In a clinical trial study, the effect of fennel on dysmenorrhea was investigated and it was found that eucalyptus extract can reduce the severity of dysmenorrhea. Based on the findings between the case and control groups, there was a statistically significant difference in pain intensity. Also, the total scores of total systemic symptoms with dysmenorrhea decreased compared to before treatment, but this decrease was statistically significant between the case and control groups. Did not have; Except for the severity variable, while the statistical difference between the case and control groups was on the threshold [38]. In another clinical trial study, the root of *Valeriana officinalis* on dysmenorrhea was investigated. According to the results of this study, the mean pain intensity before drug use in the case and control groups was not significantly different, but after drug use, the mean pain intensity decreased in the two groups, but this decrease was greater in the case group and the difference between the two groups was statistically significant [39]. In a clinical trial study, the effect of *Zataria multiflora* extract on primary dysmenorrhea was investigated and the results showed that the mean pain intensity of primary dysmenorrhea using the linear-visual pain scale in the placebo, thyme 1%, 2% thyme, 7.8 ± 1.6 , respectively, 7.3 ± 1.5 and 7.5 ± 1.7 were measured [40]. In a human clinical trial study that examined the effect of ginger on *Matricaria chamomilla* on primary dysmenorrhea, it was found that in the intervention group, pain, anxiety and feelings were significant after one month of use compared to the control group. The total mean scores of the four questionnaires in the intervention group, after 1 and 3 months after consuming chamomile tea, were significantly different from the control group [41]. In a

human clinical trial study that examined the effect of ginger on *Zingiber officinale* on primary dysmenorrhea, the improvement in dysmenorrhea was 64%, ibuprofen 66% and mefenamine 58%, which were not statistically significant [42]. In another study, daily consumption of 5 capsules containing 46 mg of fennel extract in the first three days of menstruation improved dysmenorrhea pain [43]. The results of Jafarpour et al.'s [2015] study showed that daily consumption of 3 capsules containing 420 mg of cinnamon extract powder in the first 72 hours of menstruation improves dysmenorrhea pain [44]. Anti-dysmenorrhea effects of some medicinal plants used in ethnobotanical knowledge of different regions of Iran for dysmenorrhea have been proven in clinical trial studies. In examining the effect of Chinese herbs in the treatment of primary dysmenorrhea, there was promising evidence for the use of herbs in the treatment of primary menstrual pain in comparison with nonsteroidal anti-inflammatory drugs, acupuncture and oral contraceptives [45].

Conclusion

Numerous studies have reported the side effects of chemical drugs. Also, the high tendency of people to use medicinal plants and the history of using medicinal plants, medicinal plants can have a good place in the treatment of disorders and doors such as dysmenorrhea.

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