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SHORT COMMUNICATION

Efficacy of Topical Herbal Remedies for Insomnia in Iranian Traditional Medicine

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ABSTRACT

Background: Insomnia is one of the most prevalent sleep disorders which affect the quality of life. Due to high prevalence of this disease and the side effects of sedative drugs, people tend to use herbal remedies. There are some oral or topical prescriptions in Persian medicine texts for the treatment of insomnia. The aim of this study was to investigate topical treatments for insomnia in Iranian traditional medicine (ITM) and comparing them with current therapies in modern medicine. **Methods:** In this study, ITM textbooks including the Canon of Medicine, Teb-e-Akbari, Kholasat al-Hekmah, Makhzan al-Advieh, Exir-e-azam, Al-Aghraz al-Tibbia, Val Mabahess al-Alaiia, Sharh-al-Asbab-val-Alamat, Tohfa-al-Momen, and Qarabadeen-e-Kabir were searched to investigate effective topical therapies for treating insomnia. Further, relevant studies on these topical remedies were searched at databases such as PubMed, Google Scholar, Scopus, and ScienceDirect from the beginning till June 2018 and the results were presented as tables. **Results:** There are some herbs which have been recommended in ITM for the treatment of insomnia in topical dosage form such as ointment, lotion, nasal drop, and oil. The most important herbs used in these topical dosage forms were lettuce, violet, almond, pumpkin, and water lily. Some of these herbal therapies including lettuce and violet have been studied in clinical trial for insomnia. **Conclusion:** Findings of the present study showed that according to ITM texts, there are some effective topical herbal remedies which can be used in treatment of insomnia with less adverse effects.

Key words: Efficacy, herbal medicine, insomnia, Iranian traditional medicine, topical

SUMMARY

- There are some topical herbal remedies such as lettuce, violet, almond, and pumpkin in Iranian traditional medicine which their efficacy have been confirmed in experimental or clinical studies.

The most common Topical Herbal Remedies for Insomnia in Iranian Traditional Medicine

Scientific names	Traditional names	Family	Topical dosage form(in ITM and conventional medicine)
Viola odorata	Banafsaj	Violaceae	Shamum(Olfaction) Tela(Lotion) Saoot(Nasal Snuffing Drop) Natool(Footbath) Tadhin(Anoint)
Prunus amygdalus	Louze	Rosaceae	Tadhin(Anoint)
Cucurbita pepo	Gharea	Cucurbitaceae	Ghotoor(Nasal Drop) Noshoogh(Snuff) Saoot, Zemad Natool Tadhin Tela
Lactuca sativa	Khas	Compositae (Asteraceae)	Natool Tela Noshoogh (Lakhlakheh(Inhalation
Nymphaea spp	Niloofar	Nymphaeaceae	Natool(Footbath) Shamum(Olfaction) Lakhlakheh(Inhalation)

Abbreviations used: ITM: Iranian traditional medicine; ISI: Insomnia severity index; NREM: Nonrapid eye movement sleep.

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INTRODUCTION

Sleep and wake are among the six principles (Setteye-Zarorie in Iranian traditional medicine [ITM]) of living healthy life, correlating with the life of human and animal and without which system will not survive.[1] Sleep disturbances generally cause daily widespread drowsiness, which can affect human mood, consciousness, memory, safety, and daily function.[2] Interestingly, either in modern medicine, insomnia is not defined by sleeping hours because people's need for sleep is different and some people naturally need a shorter sleep time.[3] From the point of view of ITM, according to the type of temperament, the need for sleep is different in people and people whose brain temperament tends to dry, typically need to sleep less from others.[4] Statistically, the incidence of insomnia is different in studies conducted in different countries; however, in general, 33% of the population report insomnia in a stage of their life. While 13% suffer from persistent and chronic insomnia.[5] Insomnia is one of the most common sleep disorders characterized by difficulty in sleeping, difficulty in falling sleep, or staying sleeper deprivation from reinforcing and refreshing sleep.[2] In modern medicine, there are two main types of sleep disorder based on DSM-IV including "dys-somnia" and "para-somnia."[3] The most common type of sleep disorder is "insomnia." According to the DSM-IV criteria, insomnia refers to difficulty in falling or staying asleep or deprivation from reinforcing and refreshing sleep for 1 month or more leading to individual's dysfunction.[3] There are some studies one treatment of insomnia with medicinal herbs, including the research on aromatherapy in Persian medicine to reduce anxiety and sleep disorders[6] and herbal medicine for insomnia.[7] According to previous studies, herbal medicines such as violets, lilies, pumpkins, and almonds have shown effective role in the treatment of insomnia.[8]

In ITM literature, insomnia is called "*Sahar*" which means abnormal awaking for a long time.[4] The causes of insomnia are different in

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traditional medicine[4,9-11] and, accordingly, there are oral and topical treatments or behavioral recommendations for different types of insomnia. The basis of treating insomnia in ITM, particularly insomnia caused by warmth or dryness of the brain, is to moisturize the brain which can be done with foods, medications or massage therapy.[10-12]

Moreover, several articles as well as some clinical trials have been conducted to examine the effect of traditional products on treating insomnia.[2,13-15] According to our investigations, efficacy of topical remedies for insomnia in ITM texts according to scientific literature, have not been investigated so far. Hence, in continuous to previous studies on efficacy of herbal remedies in ITM, in the present study, topical herbal remedies for insomnia and also related experimental and clinical articles have been studied.[16,17]

METHODS

In this study, a research in ITM reference books (the Canon of medicine, Teb-e-Akbari, Kholasat al-Hekmah, Makhzan al-Advieh, Exir-e-azam, Al-Aghraz al-Tibbia, Val Mabahess al-Alaiia, Sharh-al-Asbab-val Alamat, Tohfa-al-Momen, and Qarabadeen-e-Kabir) was performed to investigate effective topical therapies for treating insomnia. In addition, relevant studies on these topical remedies, was searched at database such as PubMed, Google Scholar, Scopus, and ScienceDirect from the beginning till June 2018 were done and the results were presented as tables.

RESULTS

The medicinal plants used to treat insomnia as topical dosage forms are presented in Table 1. Some of these herbs such as violet, pumpkin, lettuce and almond have been represented in different traditional texts as topical treatments for insomnia

Efficacy of some of the topical herbal remedies for insomnia in ITM has also been investigated in experimental and clinical studies [Table 2].

DISCUSSION

Insomnia is one of the most common sleep disorders, which is characterized by difficulty in falling or staying asleep or deprivation from reinforcing and refreshing sleep.[3] Sleep disorders generally cause daily widespread drowsiness, which can affect the mood, consciousness, memory, safety, and daily function of the individual.[2]

In current medicine, the treatments used for insomnia besides medication are behavioral therapy, sleep hygiene education, muscles relaxation, biofeedback, stimulus control, sleep restriction, cognitive therapy, cognitive behavioral therapy, and light therapy. Other treatments including herbal products such as valerian, homeopathy, aromatherapy, using certain diets and dietary supplements, including hydroxytryptophan and melatonin, have been also found useful in the treatment of insomnia.[30] Drugs used for insomnia in current medicine include sedative agents (benzodiazepine and non-benzodiazepine),

Table 1: Medicinal plants used to treat insomnia in topical dosage form in Iranian traditional medicine

Scientific names	Traditional names	Family	Topical dosage form (ITM and conventional medicine)	References
Viola odorata	Banafsaj	*Violaceae*	Shamum (olfaction)	[8,11,12,18]
			Tela (lotion)	
			Saoot (nasal snuffing drop)	
			Natool (footbath)	
			Tadhin (anoint)	
Prunus amygdalus	Louze	*Rosaceae*	Tadhin (anoint)	[8,12,12]
Crocus sativus	Zafaran	*Iridaceae*	Natool (footbath)	[8,12,19]
			Zemad (ointment)	
			Tela (lotion)	
Cucurbita pepo	Gharea	*Cucurbitacea*	Ghotoor (nasal drop)	[8,11,18,19]
			Noshoogh (snuff)	
			Saoot (nasal snuffing drop)	
			Zemad (ointment)	
			Natool (footbath)	
			Tadhin (anoint)	
			Tela (lotion)	
Lactuca sativa	Khas	*Compositae (Asteraceae)*	Natool (footbath)	[8,11,12]
			Tela (lotion)	
			Noshoogh (snuff)	
			Lakhlakheh (inhalation)	
Nymphaea spp.	Niloofar	*Nymphaeaceae*	Natool (footbath)	[12,18]
			Shamum (olfaction)	
			Lakhlakheh (inhalation)	
Brassica oleracea	Kalam/karanb	*Brassicaceae*	Saoot (nasal snuffing drop)	[8]
Corianderum sativum	Cozborae	*Apiaceae*	Lakhlakheh (inhalation)	[8]
			Natool (footbath)	
Papaver somniferum	Afyoon (khashkhash)	*Papaveraceae*	Shamum (olfaction)	[8]
Commiphora myrrha	Morr-e-maki	*Burseraceae*	Shamum (olfaction)	[8]
Iris germanica	Irsa	*Iridaceae*	Zemad (ointment)	[8]
Anethum graveolens	Shebet	*Apiaceae*	Tadhin (anoint)	[12,18]
Rosa damascene	Varde-Ahmar	*Rosaceae*	Natool (footbath)	[8]
			Tadhin (anoint)	

ITM: Iranian traditional medicine

Table 2: Experimental and clinical studies of topical herbal remedies for insomnia in Persian medicine

Scientific name	Extract/plant part	Study type	Outcomes	Reference
Viola odorata	Dried flowers	Clinical trial (pre-test-post-test study)	Improvement in sleep and ISI score	[20]
Prunus amygdalus	Fruits	*In vivo* In rat (400 mg/kg)	Prolongation of total sleeping time, increase in NREM sleep	[21]
Cucurbita pepo	Tea prepared from *C. pepo* seeds (pepokabo-cha)	Clinical trial (3 weeks drinking pepokabo-cha)	Improvement of sleep quality	[15]
	Fruits	*In vivo* in mice (200 mg/kg)	Increased sleep duration	[22]
Crocus sativus	Saffron powder (the flower)	Clinical trial (quasi-experimental study) (300 mg/day)	Improvement of sleep quality	[23]
	Extract of stigma (the flower)	*In vivo* in mice (0.56 g/kg)	Increased total sleep	[24]
Lactuca sativa	Seed oil	Clinical trial (prospective single-blind, randomized, placebo-controlled trial) (1000 mg lettuce seed oil)	Improvement of sleep rating Scale scores	[25]
	The hydro-alcoholic extract of lettuce	*In vivo* in mice (50, 100, 200, 400 mg/Kg)	Prolonged the pentobarbital-induced sleep duration at dose of 400 mg/kg	[26]
	The hydro-alcoholic extract of romaine lettuce	*In vivo* in mice (80, 160 mg/kg)	Increase in the sleep duration	[27]
Coriandrum sativum	Dried seeds	*In vivo* In mice (600 mg/kg)	Increased pentobarbital-induced sleeping time	[28]
Brassica oleracea	Hydroalcoholic extract of leaves	*In vivo* In mice (50-200 mg/kg)	Increased sleep duration, decreased sleep latency	[29]

ISI: Insomnia severity index; NREM: Nonrapid eye movement sleep

rumletone, antidepressants, antihistamines, and melatonin, which are associated with multiple side effects.[30] Sedative agents have some side effects such as daytime drowsiness, dizziness, cognitive impairment, gait abnormality, dependence, and rebound symptoms if suddenly stopped taking the drug. In addition, benzodiazepines should be used with caution in people such as pregnant women and patients with hepatic diseases, kidney diseases, lung diseases, and sleep apnea. Therefore, there are tendency to alternative and complementary therapies to treat insomnia.

In ITM literature, insomnia is called "*Sahar*." The basis of treating insomnia in traditional medicine, especially insomnia due to the dryness of brain, is to moisturize the brain, which can be done by nutrition, using spice or massage therapy.[31,32]

According to the results of the current study, oral and topical therapies have been used to treat insomnia in traditional medicine. Topical treatments of insomnia include various dosage forms such as ointment, lotion, nasal drops, topical oils, and inhalants. Medicinal herbs are prescribed as single drug or combination of herbs in these topical treatments. The most common herbs used topically to treat insomnia, which has been mentioned in different traditional literatures, include pumpkin, violet, lettuce, water lily, and almond. Among these plants, lettuce and violet have been examined and turned out to be effective to treat insomnia in clinical trial. These results are in agreeing to previous studies on effective herbal drugs for insomnia.[6]

The findings showed that plants such as aromatic violets, pumpkin, almond, lettuce, poppy, coriander, lavendula, chamomile, and saffron, which have been recommended for insomnia in ITM, also have shown good effects in animal or human models for the treatment of insomnia. Some common herbs recommended in ITM for insomnia such as water lily have not been examined in animal or human studies yet.

Further clinical studies on topical herbal remedies for insomnia may due to produce new topical treatment origin from medicinal herbs for insomnia.

CONCLUSION

According to ITM literature, topical forms of herbs or herbal preparations are effective treatments for improving sleep disorders. Some topical drug from medicinal herbs such as violet, pumpkin, or almond can be potential alternative medicine for insomnia. These medications are generally applied in forms of poultices, lotions, ointments, inhalation, olfaction, and nasal drop on the temporal area, frontal area, or other places.

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Conflicts of interest

There are no conflicts of interest.

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