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Original Article

Prescription patterns of herbal medicine for menopausal disorders in major Korean medicine hospitals: a multicenter retrospective study



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ABSTRACT

Background: This study aimed to obtain the symptom, prescription and therapeutic patterns for the treatment of patients with menopausal syndrome in major Korean medicine (KM) hospitals.

Methods: We used a retrospective chart review of climacteric disorder and postmenopausal syndrome patients by examining medical records (ICD-10, menopausal and female climacteric states: N95.1, Menopausal and perimenopausal disorder, unspecified: N95.9) from eight university KM hospitals in South Korea.

Results: The main symptoms of 1,682 patients with menopausal disorders visiting eight college-affiliated oriental medicine hospitals were hot flush, hyperhidrosis, fatigue, insomnia, and chest tightness. Guipi decoction, Si-wu guipi decoction, Qing-xin lianzi-yin, Jiawei xiao-yao-san and Guipi wen-dan decoction were the most commonly prescribed treatments for menopausal disorders. Patients were most often treated with a combination of herbal medicine and acupuncture.

Conclusion: Our study shows that the current prescribed herbal medicines were used for treating menopausal disorders in Korean medicine hospitals. However, the objectivity of the efficacy assessment should be studied further.

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1. Introduction

Women around the world suffer from symptoms of menopausal syndrome associated with ovarian failure and sex hormone deficiency across all races, colors and sociodemographic factors.¹ The

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most common symptoms experienced by postmenopausal women are vasomotor, urogenital and psychological symptoms such as hot flashes, night sweating, muscle and joint pain, depression, sexual dysfunction, vaginal dryness, palpitation, insomnia, anxiety, headache, and fatigue.² Hormone replacement therapy (HRT) has been considered to be the mainstream therapy for menopausal women.³ However, HRT utilization has undergone a paradigm shift^{4,5} after reporting AEs in several publication.⁶⁻⁸ A study of HRT and menopause reported that women had negative feelings about the use of HRT, and some women with menopause symptoms desired nonhormonal therapies and natural remedies because of the potential risk of breast cancer, thrombosis, and cerebral infarction conferred by HRT.⁹

Among menopausal women, traditional Chinese medicine (TCM) and complementary and alternative medicine (CAM) have been perceived to be effective remedies for menopausal symptom relief.¹⁰⁻¹⁴ An analysis of symptoms, prescriptions and therapies in clinical practice is important to find frequently used CAM therapies for menopause disorders and postmenopausal syndrome. However, few analyses have examined the prescription patterns of TCM or CAM for menopausal symptoms. Therefore, it is difficult to find a study that identified frequent prescriptions commonly used for climacteric disorder and postmenopausal syndrome in clinical practice.

Several studies reported frequently prescribed herbal medicine in clinical practice by analyzing nationwide prescribing databases.¹⁵⁻¹⁹ However, there are a few studies of for Korean medicine (KM) treat menopausal syndrome in clinical practice. Therefore, the aim of this study was to analyze the symptom, prescription and therapy patterns of TKM for female patients with climacteric disorders.

2. Methods

2.1. Study design

This study is a retrospective chart review of climacteric disorder and postmenopausal syndrome patients who received treatment with TKM on-site.

2.2. Participants

We included the medical records of climacteric disorder patients who received treatment with TKM at traditional medical university hospitals in South Korea. Eight KM medical hospitals participated in this study, including Kyung Hee University Korean Medicine Hospital at Gangdong, Daegu Korean Medicine Hospital of Daegu Haany University, Korean Medicine Hospital of Daejeon University, Dongguk University Ilsan Oriental Hospital, Dongshin University Suncheon Oriental Medicine Hospital, Dong-Eui University Korean Medicine Hospital, Semyung University Oriental Medicine Hospital and Wonkwang University Gwangju Oriental Medical Hospital.

2.3. Inclusion and exclusion criteria

The subjects were considered to be eligible for outpatient visits from January 1, 2010 to May 31, 2016, if symptoms of menopausal disorders were their primary presenting concern. Outpatient visits to the Oriental Medicine Hospital were coded using the 10th version of the International Classification of Diseases (ICD-10, menopausal and female climacteric states: N95.1, Menopausal and perimenopausal disorder, unspecified:N95.9) by clinicians. Clinically, patients who did not have the corresponding code, did not take herbal medicine, or were not associated with menopause symptoms were excluded.

2.4. Variables

- 1) Participants age distribution
- 2) Participants' main menopausal symptoms (hot flush, depression, and etc)
- 3) Major prescribed herbal medicines for the participants
- 4) Major adjunction treatments with herbal medicines (acupuncture, moxibustion, and etc)

2.5. Data sources/measurement

We collected the data from the Case Report Form (CRF) and the Electronic Medical Record (EMR) of patients of eight KM medical hospitals in South Korea.

2.6. Statistical analysis

The results were subjected to frequency analysis using IBM SPSS Statistics Version 20.0 Windows (IBM, USA). Participants' age and frequency of prescription of herbal medicine for participants were analyzed using descriptive statistics.

2.7. Ethical considerations

This study was approved by the Institutional Review Board (IRB) of the eight participating universities (Daegu Hanny University: DHUMC-D-16010-PRO-10; Daejeon University: DJDSKH-16-E-5; Dongguk University: 2016-08; Dongshin University (Suncheon: 2016-02; Gwangju: DSGOH-36); Dong-Eui University: 2016-03; Kyung Hee University: 2016-09-010; Semyung University: SKMHC1606-06; Wonkwang University: WKIRB 2016-11). We collected the patients' data from each hospital without personal identification number and name for protecting each patient's personal private information.

3. Results

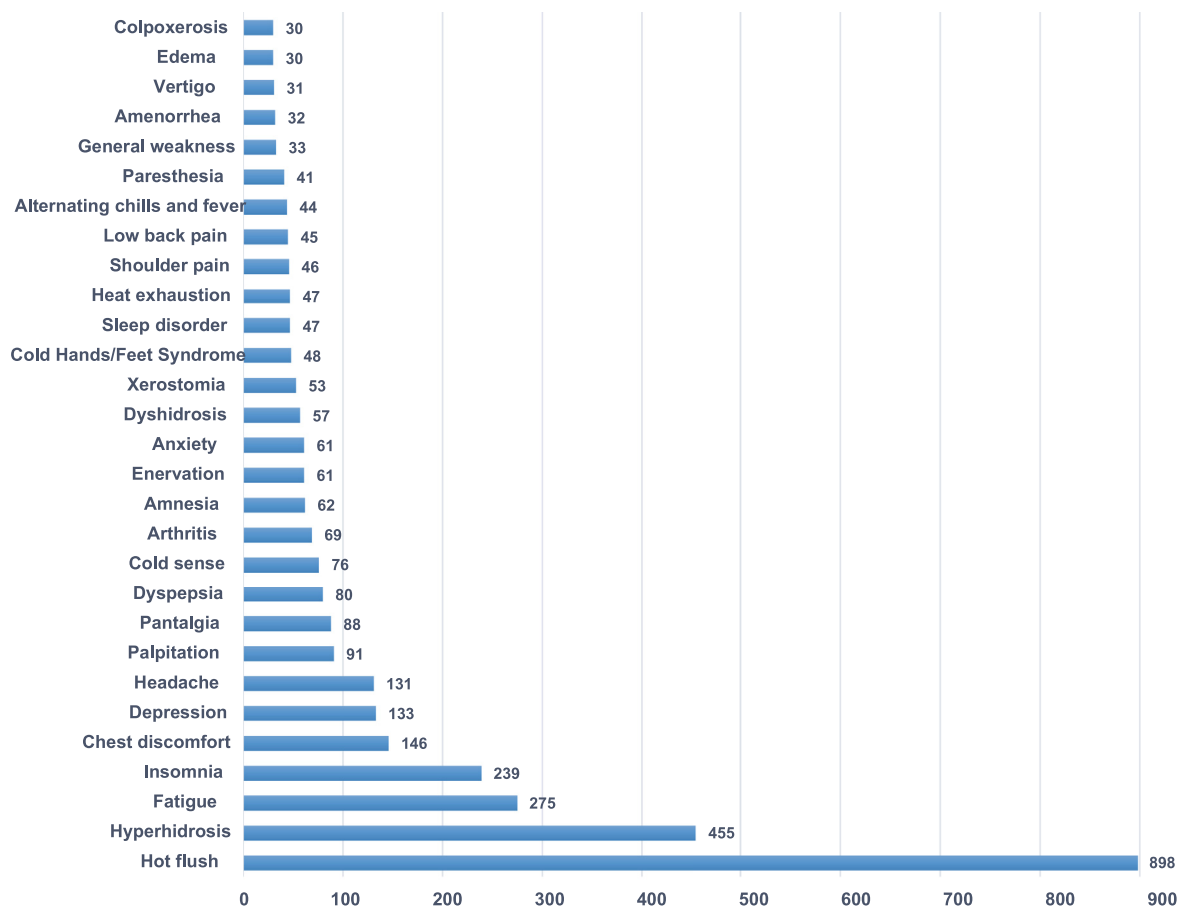
The total medical records of 1,682 patients with climacteric disorders who visited the eight hospitals were retrospectively analyzed (Supplement 1A). An approximately equal number of patients came from all of the south Korea, and the data were collected in a balanced manner (Supplement 1B). Approximately 80% of patients with climacteric disorders were over 40 years of age 50-59 years of age (Supplement 1C).

The major symptoms experienced by climacteric disorder patients who visited eight university-affiliated Korean medicine hospitals were 898 cases of hot flush (21.6%), 455 cases of hyperhidrosis (11.0%), 275 cases of fatigue (6.6%), and 239 cases of insomnia (5.8%) (Fig. 1A). The most common prescriptions for treating patients with menopausal disorder were Guipi decoction (Guibi-tang, 17.1%), Si-wu guipi decoction (Samulguibitang, 6.9%), Qing-xin lianzi-yin (Chungsimeonjaeum, 6.6%), Jiawei xiao-yao-san (Gamisoyo-san, 6.6%), and Guipi wen-dan decoction (Guibiondam-tang, 4.3%) (Fig. 1B and Supplement 3).

Table 1 summarized the most frequently prescribed herbal medicines for each menopausal symptom (please see the Supplement 4 for full data). Several types of herbal medicines were used for each symptom.

The top five treatments provided in combination with herbal medicine were standard acupuncture (20.5%), followed by acupuncture and moxibustion (16.2%), acupuncture, moxibustion and cupping (10.2%), and acupuncture and cupping (5.5%) (Supplement 5).

(A) Frequency of menopausal symptoms



(B) Frequency of Herbal prescriptions

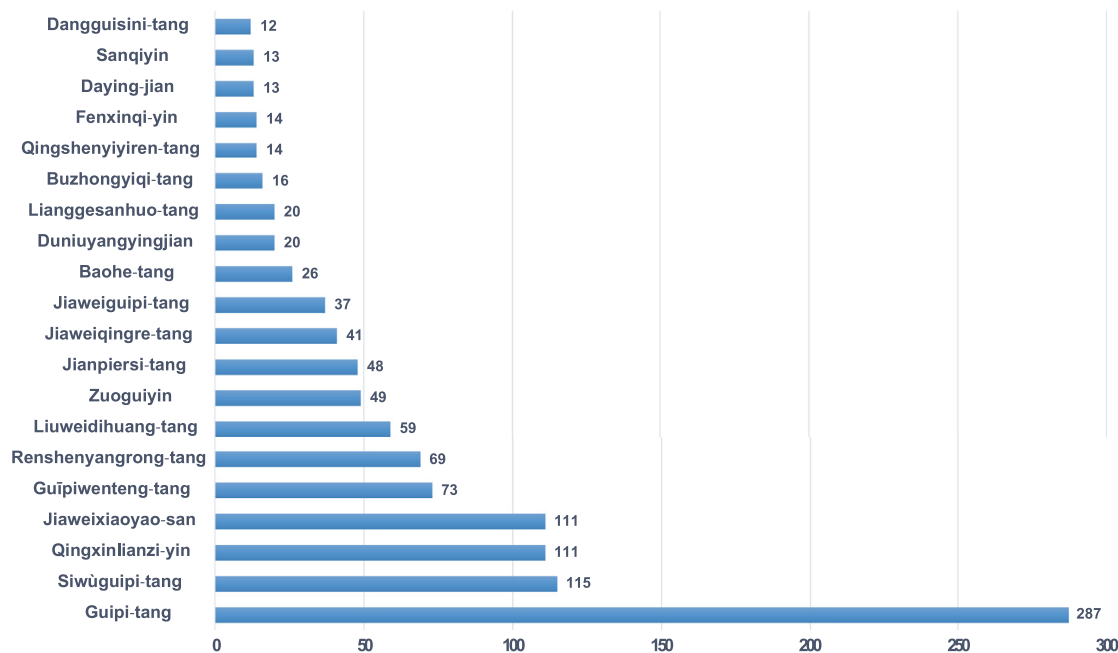


Fig. 1. (A) Frequency of menopausal symptoms; (B) Frequency of herbal prescriptions

Table 1
Most frequently prescribed herbal medicines for treating major menopausal symptoms.

Symptoms	Most frequently prescribed herbal medicine
Hot flush	Jiawei xiao-yao-san/ Qing-xin lianzi-yin/ Jiawei guipi decoction/ Guipi decoction
Hyperhidrosis	Jiawei xiao-yao-san/ Si-wu guipi decoction/ Qing-xin lianzi-yin/
Fatigue	Guipi decoction/ Jiawei guipi decoction/ Jiawei xiao-yao-san
Insomnia	Jiawei guipi decoction/ Guipi wen-dan decoction/ Si-wu guipi decoction
Chest tightness	Qing-xin lianzi-yin/ Si-wu guipi decoction
Depression	Jiawei guipi decoction
Headache	Si-wu guipi decoction/ Jiawei xiao-yao-san
Palpitation	Qing-xin lianzi-yin/ Jiawei guipi decoction
Pantalgia	Jiawei guipi decoction
Dyspepsia	Guipi decoction/ Qing-xin lianzi-yin
Chills	Jiawei xiao-yao-san/ Du-niu yang-ying jian
Arthritis	Si-wu guipi decoction/ Jiawei guipi decoction/ Guipi decoction
Forgetfulness	Si-wu guipi decoction
Enervation	Jian-pi er-si decoction/ Si-wu guipi decoction
Anxiety	Si-wu guipi decoction/ Jiawei guipi decoction
Spontaneous perspiration	Jiawei guipi decoction
Xerostomia	Qing-xin lianzi-yin
Cold Hands/Feet Syndrome	Si-wu guipi decoction
Sleep disorder	Si-wu guipi decoction/ Guipi decoction
Heat exhaustion	Si-wu guipi decoction
Shoulder pain	Si-wu guipi decoction/ Jiawei guipi decoction
Low back pain	Jiawei guipi decoction
Alternating chills and fever	Guipi wen-dan decoction/ Si-wu guipi decoction
Paresthesia	Jian-pi er-si decoction
General weakness	Qing-xin lianzi-yin
Amenorrhea	Si-wu guipi decoction
Vertigo	Si-wu guipi decoction
Edema	Si-wu guipi decoction
Vaginal dryness	Si-wu guipi decoction
Lethargy	Jiawei guipi decoction

*Multiple responses were allowed. The detailed information was listed in Supplement 4.

4. Discussion

4.1. Summary of the main results

This study showed the prescription pattern of herbal medicines in eight major Korean medical hospitals. The four most commonly used herbal medicines for treating menopausal disorders were Guipi decoction (Guibi-tang), Si-wu guipi decoction (Samulguibitang), Qing-xin lianzi-yin (Chungsimeonjaeum), and Jiawei xiao-yao-san (Gamisoyo-san). The results showed that KM doctors most commonly used acupuncture with herbal medicine for treating menopausal symptoms.

4.2. Agreements and disagreements with other studies

Several studies have investigated the pattern of herbal medicine use for treating menopausal disorders.^{16,20–22} One study surveyed the usage of herbal medicines for menopausal women in 56 KM doctors (KMDs) and showed that two herbal medicines (Jiawei xiao-yao-san and Guipi decoction) were frequently prescribed for treating menopausal symptoms.²⁰ Another study investigated the usage pattern of herbal medicine in 48 KMD obstetrics and gynecology specialists and found that two herbal medicines (Jiawei xiao-yao-san and Jiawei guipi decoction) were most often recommended.²¹ A third study conducted a web-based survey of the practical usage pattern of herbal medicine mostly in KMDs in KM clinics and also found that Jiawei xiao-yao-san and Jiawei guipi decoction were the most commonly used herbal medicines.²² A fourth study analyzed a nationwide prescription database in Taiwan and found that danzhi xiao-yao-san was a commonly prescribed herbal medicine for treating menopausal disorders.¹⁶ The results of our study were consistent with the findings of other studies. Overall, there was no substantial difference between the perception and practical usage of herbal medicines for treating

menopausal syndrome in clinics and large major hospitals in Korea or Taiwan.

4.3. Korean Medicine Hospital

Several main herbal medicines used for treating menopausal disorder is related with Guipi decoction (Guibi-tang) and it was also suggested in several studies. Thus, they could be considered as candidates for future clinical studies for efficacy assessment.

4.4. Department of Korean Obstetrics & Gynecology, Dongshin University Hospital of Korean Medicine, Naju, Korea

Although we analyzed the practical clinical information of 1682 menopausal patients in eight major KM hospitals, this study was a retrospective chart review. There was a lack of objective information, such as changes and improvements in chief complaints after treatment, which should be supplemented in the future. Secondly, we tried to obtain more records to produce a larger sample size from major KM hospitals in Korea, but there was a lack of information from KM clinics. Third, the information related with doctors' education background and working experiences was missing which may have some influence on the prescription. Forth, we focused on only herbal formulas, not single herbs, and information on the potential usage of eligible herbs for menopausal disorders was missing. Final potential limitation is no confirmatory diagnosis was possible as it was based on case files.

In conclusion, our study shows that herbal medicines related with Guipi decoction (Guibi-tang) were used for treating menopausal disorders in Korean medicine hospitals. However, the objectivity of the efficacy assessment should be studied further.

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Original data was published as clinical report in Korean (Korea Institute of Oriental Medicine, and Society of Korean Medicine and Gynecology. *Clinical practice of menopause symptoms with Korean herbal medicine*. Seoul, E-Tree Publishing, 2018). This study was re-analyzed the data and newly interpreted the data.

Author contributions

Conceptualization: H.W.L, T.Y.C., J.A.L., M.S.L.; Data curation: J.H.J., J.C., C.H.L., J.M.L., K.S.P., D.C.K., S.R.J., J.E.Y., D.K., S.H.C., S.J.Y., I.S.L., I.S.A., D.N.L., C.M.C., M.H.S., E.S.K.; Formal analysis: L.A., M.S.L.; Funding acquisition: M.S.L.; Investigation: H.W.L., T.Y.C., J.A.L.; Methodology: T.Y.C., J.A.L., J.H.J., M.S.L.; Project administration: H.W.L., M.S.L.; Resources: M.S.L.; Software: H.W.L., T.Y.C.; Supervision: M.S.L.; Validation: H.W.L.; Visualization: H.W.L., M.S.L.; Roles/Writing—original draft: H.W.L., M.S.L.; Writing—review & editing: L.A., T.Y.C., E.S.K. and approved the final manuscript. All authors have read and agreed to the published version of the manuscript.

Conflict of Interest

The authors declare no conflict of interest.

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Data availability

The data will be made available upon request.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.imr.2020.100706](https://doi.org/10.1016/j.imr.2020.100706).

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