

An Exploration of Professor Li Jun's Experience in Preventing and Treating Hypertension via Integrated Medicinal and Dietary Interventions from the Perspective of Body-Disease Correlation

Xiaotong Yun¹, Bao Xin^{1,2,*}

¹Shaanxi University of Chinese Medicine, Xianyang 712046, Shaanxi, China

²The Second Affiliated Hospital of Shaanxi University of Chinese Medicine, Xianyang 712000, Shaanxi, China

*Correspondence Author

Abstract: **Objective:** Based on the theory of body and disease correlation and Professor Li's clinical experience in the use of medicine and food for the treatment of hypertension. **Methods:** The medical records of Professor Li Jun's diagnosis and treatment of hypertension were collected, and 201 valid medical records were selected and imported into the traditional Chinese medicine inheritance computing platform V3.5. The frequency and the properties of herbs in the prescription were analyzed by association rules and k-means clustering algorithm, and the differences of blood pressure indexes before and after treatment were analyzed by SPSS 26.0. **Results:** Statistical analysis of the prescription frequency and usage patterns of edible-medicinal herbs revealed that the predominant properties were cold and warm, the principal flavors were bitter pungent and sweet, and the primary meridians involved were the liver and spleen meridians. Through association rule mining, five core herb combinations of medicine-food homology were identified; clustering analysis revealed four core food-medicine prescriptions. Statistical analysis showed a significant difference in blood pressure changes before and after treatment. **Conclusion:** Professor Li, based on the hypertension associated with phlegm and blood stasis pathogenesis, used dietary interventions to regulate the damp-phlegm and blood stasis constitution of patients, improve clinical symptoms of hypertension, and provide a theoretical basis and data support for traditional Chinese medicine diet in the prevention and control of hypertension.

Keywords: Hypertension, Homology of medicine and food, Constitution of traditional Chinese medicine, Diet therapy, Famous doctor's experience.

1. Introduction

Constitution refers to the synthesis of the body's morphological structure, physiological function, and psychological state, and its variations influence an individual's susceptibility to disease, as well as the onset, progression [1], and outcome of diseases. In recent years, with the continuous development of constitutional medicine, a large number of clinical studies have shown that constitutional bias is an important internal factor [2-4] in disease. In traditional Chinese medicine (TCM) theory, hypertension is mostly classified into the categories of "vertigo" and "headache," and its pathogenesis is closely related to constitution.

Hypertension, as a common chronic disease, has a continuously rising incidence rate worldwide. According to a study on mortality, morbidity, and risk factors in China and its provinces from 1990 to 2017, high systolic blood pressure is one of the leading causes of death [5], and its prevention has become a major public health issue globally. Although Western medicine can effectively control blood pressure in the short term, long-term use may be associated with certain adverse reactions and drug dependence. In contrast, traditional Chinese medicine has distinct advantages in reducing hypertension-related symptoms, improving quality of life, minimizing organ damage, and lowering the risk of complications. Among these approaches, medicine-food homology substances -herbs with dual functions of nutrition and therapeutic effects -can complement each other, are safe for long-term use, highlight the strengths of TCM in recuperation, align with the concept of functional foods, and

provide a feasible strategy for the long-term prevention and control of hypertension.

Professor Li Jun is a renowned TCM physician in Shaanxi Province who has been engaged in clinical practice for over 50 years. He holds unique perspectives on the treatment of cardiovascular and cerebrovascular diseases using TCM, and his therapeutic strategies and prescription formulations provide valuable insights for hypertension management through TCM-based constitutional regulation. This study aims to analyze Professor Li's clinical experience in treating hypertension from the perspective of phlegm and blood stasis through the TCM inheritance support platform, and to integrate findings from modern medicine on hypertension, in order to investigate the mechanisms and practical value of medicine-food interventions in hypertension control.

2. Materials and Methods

2.1 Case Collection

The outpatient medical records of Professor Li's treatment of hypertension were collected, and 201 complete data records were selected as the research object.

2.2 Inclusion Criteria

(1) Hypertension diagnosis criteria [6]; (2) Complete documentation including chief complaint, history of present illness (HPI), past medical history, symptoms and signs, treatment, therapeutic principle, syndrome differentiation, prescription details, and dietary advice; (3) Compliance with

phlegm-dampness and/or blood stasis diagnostic criteria [7].

2.3 Exclusion Criteria

(1) Patients with severe primary diseases of the liver, kidney, hematopoietic system, or mental disorders; (2) Duplicate records.

2.4 Data Standardization

Drug names were standardized according to the 2020 edition of the “Pharmacopoeia of the People’s Republic of China” [8]. The classification of substances traditionally used as both food and medicine followed the “Regulations on the Management of Medicinal Materials in Traditional Chinese Medicine” issued by the National Health Commission [9].

2.5 Data Entry and Mining Methods

Data were entered using the “Traditional Chinese Medicine Inheritance Computing Platform V3.5” software developed by the China Academy of Chinese Medical Sciences. The frequency, category, properties, flavors, and meridian tropism of herbs were analyzed. Herb combinations and prescription patterns were identified using association rule mining and cluster analysis.

2.6 Efficacy Evaluation

2.6.1 Evaluation Method

From the 201 patient records, 30 complete cases were selected for data analysis. Systolic and diastolic blood pressure values before and after treatment were statistically analyzed according to the “Guiding Principles for Clinical Research of New Traditional Chinese Medicine” (2002 edition) [10] to evaluate therapeutic efficacy in hypertension.

2.6.2 Blood Pressure Efficacy Criteria

Marked improvement: (1) Diastolic blood pressure decreased by more than 10 mmHg after treatment and returned to normal; (2) Although diastolic blood pressure did not reach the normal range, it decreased by 20 mmHg or more from the baseline value before treatment. Effective: (1) Diastolic blood pressure decreased by less than 10 mmHg but returned to normal; (2) Diastolic blood pressure decreased by 10-19 mmHg compared to baseline, but did not reach normal levels; (3) Systolic blood pressure decreased by more than 30 mmHg compared to baseline. Ineffective: Blood pressure changes after treatment did not meet any of the above criteria for “marked improvement” or “effective.” Total effective rate (%) = [(number of markedly improved cases + number of effective cases) / total number of patients] × 100%.

2.6.3 Statistical Methods

SPSS 26.0 software was used for data analysis. Measurement data are expressed as mean ± standard deviation. Differences in blood pressure indices before and after treatment were compared using the paired-sample t-test.

3. Results

3.1 Drug Categories and Frequencies

The statistics of drug categories and frequencies show that among the 99 kinds of traditional Chinese medicines involved, 20 are high-frequency drugs with a usage frequency of ≥80 times, as shown in Table 1. The prescriptions also include traditional Chinese medicines that are both food and medicine, as shown in Table 2. By combining Tables 1 and 2, it is found that among the 20 high-frequency drugs, the proportion of traditional Chinese medicines that are both food and medicine is 50%.

Table 1: Frequency Statistics of Chinese Herbs (frequency > 80)

Chinese medicine names	Frequency	Chinese medicine names	Frequency
Edible kudzu vine root	197	Hawthorn	150
Gastrodia	196	Uncaria	147
Szechwan lovage rhizome	177	Ground beetle	147
Red paeoniae trichocarpae	175	Raw rehmannia	123
Ternate pinellia	172	Massa medicata fermentata	123
Tangerine peel	172	Angelica sinensis	118
Tuckahoe	165	Leeches	113
Angelica dahurica	162	Salvia miltiorrhiza	111
Safflower	159	Arisaema cumbile	97
Peach seed	156	Acori Tatarinowii Rhizomai	87

Table 2: Frequency Statistics of Homology of medicine and food

Chinese medicine names	Frequency	Chinese medicine names	Frequency
Edible kudzu vine root	197	Barley sprout	76
Gastrodia	196	Turmeric	67
Tangerine peel	172	Cassiae semen	54
Tuckahoe	165	Gardenia	26
Angelica dahurica	162	Armeniaca	9
Safflower	159	Carthami Flos	7
Peach seed	156	Coix seed	5
Hawthorn	150	Lotus leaves	4
Raw rehmannia	123	Licorice	3
Angelica sinensis	118	Spine date seed	3

3.2 Properties, Flavors, and Meridian Tropism of Drugs

Statistical analysis of the properties, flavors, and meridian tropism of the prescribed herbs revealed that the predominant medicinal properties were cold and warm; the most common flavors were bitter, pungent, and sweet; and the primary meridians involved were the liver and spleen meridians. These findings are summarized in Tables 3-5.

Table 3: Frequency Statistics of Medicinal Properties of Drugs

Properties	Frequency
Cold	997
Cool	457
Neutral	864
Warm	1592
Hot	10

Table 4: Frequency Statistics of Medicinal Flavors of Drugs

Medicine flavor	Frequency
Pungent	1714
Bitter	1691
Sweet	1803
Salty	343
Sour	188

Table 5: Frequency Statistics of Meridian Tropism of Drugs

Meridians tropism	Frequency
Lung	1125
Large intestine	511
Heart	1336
Small intestine	44
Pericardium	163
Triple Energizer	27
Spleen	1573
Stomach	1211
Liver	2379
Gallbladder	277
Kidney	415
Bladder	43

3.3 Association Rule Analysis

Support indicates the frequency of simultaneous occurrence of antecedent and consequent items, whereas confidence indicates the conditional probability of the consequent occurring given the antecedent. The association rule algorithm was applied to analyze high-frequency drugs, yielding five common combinations of drug-food homologous substances. These results are presented in Tables 6 and 7.

Table 6: Association Rules (confidence ≥ 0.85)

Serial No.	Association rules	Confidence
1	Gastrodia \rightarrow Edible kudzu vine root	0.99
2	Tangerine peel \rightarrow Edible kudzu vine root	0.98
3	Edible kudzu vine root \rightarrow Tangerine peel	0.85
4	Tangerine peel \rightarrow Gastrodia	0.98
5	Gastrodia \rightarrow Tangerine peel	0.85
6	Angelica dahurica \rightarrow Edible kudzu vine root	0.99
7	Edible kudzu vine root \rightarrow Angelica dahurica	0.82
8	Edible kudzu vine root, Tangerine peel \rightarrow Gastrodia	0.99
9	Edible kudzu vine root, Gastrodia \rightarrow Tangerine peel	0.85

Table 7: Drug combinations (Number of support degrees ≥ 160)

Serial No.	Drug combinations	Frequency
1	Edible kudzu vine root, Gastrodia	195
2	Edible kudzu vine root, Tangerine peel	168
3	Gastrodia, Tangerine peel	167
4	Edible kudzu vine root, Gastrodia, Tangerine peel	166
5	Edible kudzu vine root, Angelica dahurica	161

3.4 Clustering Analysis

The clustering analysis function of the computing platform - using the k-means algorithm combined with a regression model - was applied; the number of clusters was set to 4, and hypertension prescriptions were grouped into four clusters centered on treatment patterns. (See Table 8.)

Table 8: Cluster analysis

Serial No.	Core drug combination
1	Edible kudzu vine root, Gastrodia, Angelica Dahurica, Szechwan lovage rhizome, Red paeoniae trichocarpae, Ternate pinellia
2	Edible kudzu vine root, Gastrodia, Hawthorn, Uncaria, Ternate pinellia, Tangerine peel
3	Edible kudzu vine root, Gastrodia, Poria, Szechwan lovage rhizome, Ternate pinellia, Red paeoniae trichocarpae
4	Red paeoniae trichocarpae, Gastrodia, Safflower, Peach seed, Szechwan lovage rhizome, Edible kudzu vine root

3.5 Comparison of Clinical Efficacy Data Before and after Treatment

The data indicate that the blood pressure values before treatment were lower than those after treatment. The mean systolic blood pressure decreased to 131.13 ± 14.616 mmHg, and the mean diastolic blood pressure decreased to 83.80 ± 11.093 mmHg. Comparisons within the groups before and after treatment for systolic and diastolic blood pressures, using paired sample t-tests, showed that the P values were all less than 0.05, as shown in Table 9. The total effective rate was 86.7%, including 11 cases of marked improvement, 15 cases of improvement, and 4 cases of no improvement.

Table 9: Comparison of blood pressure values before and after treatment

	Before treatment	After treatment	t	P
Systolic blood pressure	147.80 \pm 9.785	131.13 \pm 14.616	6.394	< 0.001
Diastolic blood pressure	94.43 \pm 12.277	83.80 \pm 11.093	7.747	< 0.001

4. Discuss

4.1 The “Body-Disease Correlation” Theory in Hypertension Prevention and Treatment

The theory of TCM constitution holds that constitution is a relatively stable physiological state formed by the dynamic interplay of innate genetic endowment and postnatal environmental influences, which determines an individual's susceptibility to disease and predisposition to specific pathological patterns [11]. Studies have shown that the phlegm-dampness and blood-stasis constitutions are common constitutional patterns associated with hypertension [3]. Patients with phlegm-dampness constitution often present with spleen deficiency impairing transportation and transformation, leading to internal retention of dampness that congeals into phlegm; those with blood-stasis constitution commonly exhibit liver qi stagnation and impaired smooth flow of qi, resulting in blood stasis. These two constitutions may occur independently or frequently coexist, giving rise to the complex pathomechanism of “phlegm-blood stasis intermingling”. Without timely constitutional intervention, this intermingling tends to worsen the condition and increase the risk of severe complications such as stroke and myocardial infarction [12]. Therefore, correcting constitutional imbalance is of fundamental importance in the prevention and treatment of hypertension.

Professor Li Jun consistently adheres to the principle of “treating disease by addressing its root cause” in clinical diagnosis and treatment, integrating syndrome differentiation with constitutional differentiation. For patients presenting phlegm-dampness syndromes -including dizziness, heavy-headedness, chest oppression, nausea, greasy tongue coating, and slippery pulse -or blood-stasis syndromes -including stabbing headache, dull or cyanotic complexion, dark-purple tongue with petechiae or ecchymosis, and choppy pulse -he adopts a therapeutic strategy centered on resolving phlegm and stasis [13]. He integrates the “constitution-disease correlation” theory with the concept of “food-medicine homologous substances”, thereby developing a distinctive hypertension prevention and treatment protocol. On one hand, he selects appropriate food-medicine homologous herbs based on the patient's constitution: for phlegm-dampness, herbs such as Tuckahoe, Tangerine Peel, and Hawthorn to

strengthen the spleen and resolve dampness; for blood stasis, herbs such as Peach seed, Safflower, *Angelica sinensis* to activate blood circulation and resolve stasis. On the other hand, guided by modern nutritional principles, he formulates personalized dietary regimens: phlegm-dampness individuals are advised to follow a light, low-sodium, fractionated diet; blood-stasis individuals are instructed to avoid raw-cold foods and adopt warming, circulatory-supportive dietary patterns.

This clinical approach originates from a holistic understanding of constitution, pathogenesis, and therapeutic strategy. By correcting constitutional bias, the root source of phlegm and stasis formation is interrupted; concurrent use of food and medicine thus treats existing manifestations while preventing future disease progression. Constitutional intervention extends beyond pharmacotherapy into daily dietary management, establishing a comprehensive continuum from treatment to prevention.

4.2 Clinical Strategy of Integrating Medicinal Herbs and Dietary Therapy for Hypertension Management

Substances that are both food and medicine, derived from the vital energies of heaven and earth, possess dual functions: nourishing the body and exerting therapeutic effects. As stated in the *Huangdi Neijing Taisu*, “Grains, livestock, fruits, and vegetables serve as food when consumed to satisfy hunger; when employed for disease treatment, they are termed medicine” [14]. In traditional Chinese medicine, constitutional imbalance constitutes the foundational basis for disease development. Food-medicine homologous substances, guided by their inherent properties, including the four natures (cold, cool, warm, hot), five flavors (pungent, sweet, sour, bitter, salty) and meridian tropism, can rectify constitutional deviation, and through consistent dietary integration, gently reinforce healthy qi while dispelling pathogenic factors. Modern research demonstrates that food-medicine homologous herbs are safe, well-tolerated, and readily incorporated into daily diets, with documented benefits in improving sub-health states, regulating blood pressure, and alleviating fatigue [15]. Their application in hypertension prevention and management offers an ideal, practical vehicle for implementing the TCM principle of “treating disease before it arises” within chronic disease care [16].

Professor Li Jun consistently applies the integrative concept of food-medicine synergy in hypertension management. He emphasizes not only the coordinated use of conventional herbal formulas and food-medicine homologous herbs but also the strategic pairing of herbal interventions with everyday dietary practices. Analysis of his prescribing patterns reveals that the herbs most frequently employed in hypertension treatment predominantly exhibit cold or warm natures, with bitter, pungent, and sweet flavors, and primarily target the liver and spleen meridians. Notably, Edible kudzu vine root and *Gastrodia* (both classified as food-medicine homologous substances) are among his highest-frequency prescriptions, embodying his clinical philosophy of “synergistic food-medicine application addressing both root and branch”.

4.2.1 Synergistic application of traditional Chinese medicines and food-medicine homologous herbs

In clinical practice, Professor Li Jun combines TCM with mild-natured food and medicine equivalents to form a synergistic therapeutic system with clear pharmacological effects. For the actual syndromes during the acute stage of hypertension or when symptoms are severe, he often selects Chinese medicines such as *Uncaria* and Ground beetle to clear heat and calm the liver, as well as to disperse blood stasis and remove blood clots. At the same time, he combines medicinal food equivalents such as *Cassia* seed and *Rehmannia glutinosa* to exert the effects of clearing the liver and purging fire, and nourishing yin and moistening dryness. For patients with deficiency of essence and actual symptoms, he follows the principle of “treating phlegm-dampness diseases with warm medicines” from “The Essentials of *Jingui Formula*” and combines herbs such as *Leeches* and *Arisaema cum bile* with warm-natured medicinal food equivalents such as Tangerine peel and Tuckahoe to achieve the effects of drying dampness, strengthening the spleen, and eliminating phlegm and promoting blood circulation. The combination of cold and warm medicines, as well as the use of tonifying and purging methods simultaneously, not only quickly eliminates the symptoms but also treats the root cause, achieving the therapeutic effect of “strengthening the body without assisting evil and eliminating evil without harming the body”.

In terms of the combination of flavors, Professor Li Jun is skilled in using the method of combining bitter, pungent, and sweet to regulate qi and blood. Bitter-tasting medicines such as *Red paeoniae trichocarpae* and *Salvia miltiorrhiza*, combined with medicinal food equivalents such as *Cassia* seed and *Gardenia*, can clear heat and cool blood, and clear real fire in the heart and liver meridians. Pungent-tasting medicines such as *Szechwan lovage rhizome*, combined with Edible kudzu vine root and *Turmeric*, can promote qi, relieve pain, and activate blood circulation. Ye Tianshi said, “At first, there is qi stagnation in the meridians, and later, blood is injured and enters the vessels” [17]. For patients with prolonged hypertension, there is often qi stagnation and blood stasis. Pungent-tasting medicines can regulate the liver and promote qi circulation, allowing qi and blood to flow smoothly, which is beneficial for improving blood circulation. Sweet-tasting medicines such as *Poria cocos* can strengthen the spleen and remove dampness, assist the spleen in digestion and eliminate phlegm and dampness, and also prevent the stomach from being damaged by cold and bitter medicines. The combination of bitter, pungent, and sweet can jointly act on the liver and spleen, regulate qi, transform water-dampness and blood stasis, restore the normal physiological functions of “liver governing excretion and spleen governing transportation”, promote the distribution of body fluids and blood circulation, and thus eliminate phlegm and blood stasis.

Cluster analysis results show that four core prescriptions fully reflect Professor Li Jun’s idea of combining medicinal food and traditional Chinese medicines: In the formula of Edible kudzu vine root, *Gastrodia*, *Poria*, *Szechwan lovage rhizome*, *Ternate pinellia*, *Red paeoniae trichocarpae*, which includes medicinal food equivalents such as Edible kudzu vine root, *Gastrodia* and *Poria*, as well as traditional Chinese medicines such as *Szechwan lovage rhizome*, *Ternate pinellia* and *Red paeoniae trichocarpae*, it achieves the effect of strengthening the spleen and drying dampness, treating phlegm and blood stasis together, and is suitable for those with qi deficiency and

dampness not being transformed; In the formula of Red paeoniae trichocarpae, Gastrodia, Safflower, Peach seed, Szechwan lovage rhizome, Edible kudzu vine root, which combines medicinal food equivalents such as Safflower and Peach seed with traditional Szechwan lovage rhizome and Red paeoniae trichocarpae, it exerts the effect of nourishing blood and promoting blood circulation, and is suitable for those with severe blood stasis symptoms; In the formula of Edible kudzu vine root, Gastrodia, Angelica Dahurica, Szechwan lovage rhizome, Red paeoniae trichocarpae, Ternate pinellia, the guiding drug Angelica Dahurica is applied, suitable for those with severe dizziness and headache; In the formula of Edible kudzu vine root, Gastrodia, Hawthorn, Uncaria, Ternate pinellia, Tangerine peel, which combines medicinal food equivalents such as Edible kudzu vine root, Gastrodia and Hawthorn with traditional Uncaria and Ternate pinellia, it has the effects of clearing heat, calming the liver, and eliminating blood stasis and reducing lipid levels, and is suitable for the initial stage of hypertension accompanied by hyperlipidemia. These formulas fully demonstrate Professor Li Jun's clinical wisdom of combining medicinal food equivalents with traditional Chinese medicines.

4.2.2 The combination of traditional Chinese medicine and daily diet

Professor Li Jun integrates traditional Chinese medicine therapy and daily dietary intervention in the clinical prevention and treatment of hypertension, constructing a drug-food synergistic treatment plan. In terms of basic dietary regulation, patients are advised to follow a light diet and strictly control sodium intake, with daily salt intake not exceeding 5g; they should also limit consumption of foods high in fat and cholesterol. Furthermore, increasing dietary potassium intake to assist blood pressure reduction is recommended -fresh vegetables, fruits, and legumes, which are rich in potassium, are suggested to create a favorable internal environment for pharmacotherapy.

In terms of constitution-based dietary adjustment, Professor Li Jun highly values the role of food in regulating body constitution. For hypertensive patients with obesity and hyperlipidemia, he commonly recommends food-medicine homologous items such as black fungus powder or bitter buckwheat tea. Studies have shown that black fungus polysaccharides possess lipid-lowering and blood rheology -improving effects [18], promoting the clearance of pathological products such as phlegm-turbidity and blood stasis; rutin and other bioactive components in bitter buckwheat help regulate lipid metabolism and improve vascular function [19], thereby alleviating clinical symptoms and supporting blood pressure control. These dietary interventions are integrated with traditional Chinese medicine treatment, enhancing overall therapeutic efficacy while continuously improving phlegm-dampness and blood-stasis constitutions through daily dietary habits.

The above dietary strategies embody the therapeutic principle of "simultaneous treatment of phlegm and blood stasis". Professor Li Jun holds that the core pathogenesis in phlegm-dampness-type hypertension lies in spleen deficiency with impaired transportation and transformation, leading to internal generation of phlegm-dampness. Accordingly, he

frequently selects food-medicine homologous substances entering the Spleen meridian -such as Poria cocos, tangerine peel and hawthorn -to strengthen the spleen, dry dampness, regulate qi, and resolve phlegm. In blood-stasis-type hypertension, onset is commonly associated with liver qi stagnation and obstruction of the collaterals by static blood; thus, he selects herbs entering the Liver meridian -such as Gastrodia elata and Cassia seed -to calm the liver, anchor yang, clear liver fire, and drain heat. During treatment, he especially emphasizes "phlegm implies blood stasis" and "blood stasis implies phlegm", attentively monitoring the dynamic interplay and mutual transformation between phlegm-dampness and blood stasis. He advocated regulating the functions of the liver and spleen to fundamentally prevent the generation and mutual entanglement of phlegm-dampness and blood stasis, which reflects his therapeutic concept of treating phlegm and stasis simultaneously and preventing diseases before they occur [13].

4.3 The Mechanism of Action and the Prospect of Modern Development of Traditional Chinese Medicine with Homologous Medicine and Food

The commonly used food-medicine homologous herbs for the treatment of essential hypertension include Gastrodia elata, Pueraria lobata, Citrus reticulata pericarp, Poria cocos, Persicae Semen, Carthami Flos, Angelica dahurica, Curcuma longa, Crataegus pinnatifida, Hordeum vulgare germinatum, and Cassia obtusifolia. In terms of traditional efficacy, these food-medicine homologous herbs primarily exert effects including calming the liver and anchoring yang, activating blood circulation and resolving stasis, strengthening the spleen and transforming phlegm-dampness. Among them, Gastrodia elata and Pueraria lobata constitute Professor Li Jun's core herb pair. Gastrodia elata anchors liver yang to address the root cause while calming internal wind and unblocking the collaterals to alleviate symptoms; Pueraria lobata elevates clear yang to nourish the head and eyes, relaxes muscles and tendons to relieve cervical rigidity, and generates fluids to moisten the channels and vessels. Used synergistically, they effectively alleviate dizziness, headache, and neck discomfort. Angelica dahurica (pungent, warm, and acid), excellently relieves pain and serves as a guiding herb that directs other herbs upward to the head and face, thereby mitigating hypertension-related cephalic symptoms.

Modern medicine identifies the pathogenesis of essential hypertension as involving activation of the renin - angiotensin - aldosterone system (RAAS), vascular endothelial dysfunction, oxidative stress, chronic low-grade inflammation, and gut microbiota dysbiosis [20]. Food-medicine homologous substances exert antihypertensive effects through multiple pathways, including enhancing antioxidant capacity, improving endothelial function, suppressing inflammatory responses, and attenuating target-organ damage [21]. Studies indicate that puerarin possesses antioxidant activity and protects vascular endothelial cells; it also reduces myocardial contractility, contributing to blood pressure reduction [22]. Gastrodin (the principal active constituent of Gastrodia elata) lowers plasma viscosity, modulates lipid metabolism, protects endothelial function, promotes endothelial nitric oxide (NO) synthesis, induces vasodilation, suppresses endothelin-1 (a potent vasoconstrictor), improves vertebrobasilar artery

morphology, and enhances cerebral oxygenation [23], thus, it is clinically indicated for vertigo and dizziness. *Angelica dahurica* is classified as a “wind-dispelling” herb in TCM, with properties of dispersing exterior pathogens, warming the channels, relieving pain, and enhancing the efficacy of co-administered herbs. Its major bioactive compound, imperatorin, inhibits secretion of pro-atherogenic factors, exerts antiplatelet aggregation effects, and stimulates endothelial NO release, thereby promoting vasodilation and ameliorating endothelial dysfunction [24]. The active component of turmeric, curcumin, lowers blood pressure by inhibiting inflammatory responses and reducing oxidative stress induced by reactive oxygen species [25].

Food-medicine homologous herbs demonstrate unique advantages in correcting constitutional imbalances and lowering blood pressure. Aqueous extracts of *Crataegus pinnatifida* and *Cassia obtusifolia* exhibit lipid-regulating and antihypertensive effects [26-27]. *Citrus reticulata* pericarp, *Poria cocos*, and *Crataegus pinnatifida* act to resolve phlegm-dampness and strengthen the spleen to aid digestion; modern studies confirm that these substances enhance gastrointestinal motility, thereby improving phlegm - dampness constitution [28]. Peach kernel and safflower - which promote blood circulation and remove blood stasis - can improve platelet aggregation in rats, alleviate cardiovascular inflammation, and enhance blood flow conditions [29], thereby effectively regulating the blood-stasis constitution.

These modern research findings corroborate classical Traditional Chinese Medicine (TCM) theory, not only validating the therapeutic reliability of food-medicine homologous herbs but also providing a robust scientific foundation for their clinical application. Food-medicine homologous substances exert synergistic effects through multi-target, multi-pathway regulatory mechanisms - improving vascular function, correcting metabolic disorders, and suppressing inflammatory responses. This offers strong experimental support for Professor Li Jun’s academic concept of integrating food and medicine in the prevention and treatment of hypertension, and opens novel research avenues for TCM-based hypertension management. Future efforts should prioritize standardization of food-medicine homologous products, establishment of comprehensive quality control systems, and innovation-driven development of the TCM health industry.

5. Conclusion

Based on the “body-disease correlation” theory in Traditional Chinese Medicine (TCM), this study systematically elucidates Professor Li Jun’s academic experience in the prevention and treatment of hypertension through the integrated use of medicine and food, establishing a comprehensive prevention and treatment system encompassing “constitution identification, pathogenesis analysis, and food-medicine intervention.” The study confirms that phlegm-dampness and blood-stasis constitutions are predominant among hypertensive patients, and the interplay of phlegm-dampness and blood stasis constitutes the core pathogenic mechanism. In clinical practice, Professor Li Jun’s food-medicine-integrated therapeutic strategy emphasizes synergistic

compatibility between classical TCM herbs and food-medicine homologous substances -reflecting principles of herbal property balance (cold-warm duality), flavor integration (bitter-sweet-pungent harmony), and functional coordination between the Liver and Spleen. Second, TCM-based constitution-specific dietary therapy is integrated with modern nutritional science to formulate individualized dietary and nutritional plans for distinct constitutional patterns. Modern pharmacological studies confirm that the antihypertensive effects of *Gastrodia elata*, *Pueraria lobata*, and other food-medicine homologous herbs are mediated through antioxidant activity, endothelial function improvement, and other mechanisms -providing a robust scientific foundation for food-medicine-integrated hypertension management. This study not only deepens the application of the TCM principle of “preemptive treatment” in hypertension prevention and treatment but also offers theoretical and practical guidance for TCM-based chronic disease management -holding significant clinical translational value. Future efforts must strengthen standardization research and rigorous clinical validation of food-medicine homologous products to advance innovation in TCM approaches to hypertension prevention and treatment.

References

- [1] Wang Qi. Theoretical innovation and practice of traditional Chinese medicine constitution on the diagnosis and treatment of multimorbidity [J]. *Journal of Beijing University of Traditional Chinese Medicine*, 1-13[2025-07-18].
- [2] Zhang Jianhong, Zhang Fenfen, Dong Sihui, et al. Overview of Traditional Chinese Medicine Constitution Types in Jiangxi Province [J]. *Jiangxi Journal of Traditional Chinese Medicine*, 2020,56(07):72-75.
- [3] Zhu Qihao, Tan Jialian, Li Jianrong, et al. Exploring the relationship between traditional Chinese medicine constitution types and hypertension:a meta-analysis [J]. *Journal of Sichuan of Traditional Chinese Medicine*, 2020,43(04):208-213.
- [4] Zhai Yuming, Zhou Yabin, Fu Jiamei, et al. Relationship between traditional Chinese medicine constitution and cardiovascular disease and the research progress in traditional Chinese medicine prevention and treatment [J]. *Journal of Changchun University of Chinese Medicine*, 2024, 40(11): 1274-1278.
- [5] National Center for Cardiovascular Diseases; The Writing Committee of the Report on Cardiovascular Health and Diseases in China; HU Shengshou. Report on Cardiovascular Health and Diseases in China 2024:an Updated Summary[J]. *Chinese Circulation Journal*, 2020, 40(06): 521-559.
- [6] The Committee for Revision of the Chinese Hypertension Prevention and Treatment Guidelines, et al. “Chinese Hypertension Prevention and Treatment Guidelines (2024 Revised Edition).” *Chinese Journal of Hypertension (Chinese and English)* 32.07 (2024): 603-700.
- [7] Wang Qi. *Constitution of Traditional Chinese Medicine* [M]. Beijing: People’s Medical Publishing House, 2005.
- [8] National Pharmacopoeia Committee. *Chinese Pharmacopoeia (Volume 1)* [M]. Beijing: China Pharmaceutical Science and Technology Press, 2020.

- [9] Sun Xinyuan, Zheng Yaping, Sun Kangmeng, et al. Review, revision, and prospect of list of substances with both edible and medicinal values in China[J]. *China Journal of Chinese Materia Medica*, 2020, 50(02): 346-355.
- [10] Zheng Xiaoyu. Guidelines for Clinical Research of New Chinese Medicines [M]. Beijing: China Pharmaceutical Science and Technology Press, 2002. 73-7
- [11] Kuang Daoyuan. Human Constitutionology - The Principles of Personalized Diagnosis and Treatment in Traditional Chinese Medicine [M]. Shanghai: Shanghai Science and Technology Press, 2003: 171-180.
- [12] Li Linqin, Chen Wei, Li Yishen, et al. Research on the Degree of Arterial Stenosis in Patients with Cerebrovascular Diseases and Its Correlation with Risk Factors and Traditional Chinese Medicine Constitution [J]. *Medical Information*, 2024, 37(16): 47-51.
- [13] Li Jun, Miao Feng (editors). "Ink Lantern Reflections: Collection of Academic Experience of Famous and Experienced Doctors in Shaanxi Province - Li Jun, Doctor of Traditional Chinese Medicine". Xi'an: Northwest University Press, 2020.
- [14] Yang Shangshan. The Yellow Emperor's Inner Classic: Tai Su [M]. Beijing: Ancient Chinese Medical Books Publishing House, 2016: 13
- [15] Mou Wenrong, Zhang Tongtong, Pei Lixin, et al. Development and Application of Medicinal and Edible Homologous Chinese Medicine[J]. *Acta Chinese Medicine*, 2023, 38(03): 673-678.
- [16] Yun Hang, HU Shuiyue, Xi Jing, et al. Study on the effect of homology of medicine and food generation of tea on the adjuvant therapy of hypertension[J]. *China Medical Herald*, 2020, 17(4): 189-192, 197.
- [17] Ye Tianshi. Medical Case Records for Clinical Practice [M]. Beijing: China Press of Traditional Chinese Medicine, 2008.10: 171.
- [18] Song Xiaoyan. The Effects of Polysaccharides from *Auricularia auricula* on Renal Hypertensive Rats [D]. Xinxiang Medical University, 2020.
- [19] Jiang Erdan. Development and Application of a Dietary Therapy Nursing Protocol for Hypertensive Patients with Overweight or Obesity [D]. Shanxi Medical University, 2023.
- [20] Yang Shanjun, Pan Jipu, Gan Shihu, et al. Research Progress on Pathogenesis of Essential Hypertension and Regulation of Traditional Chinese Medicine[J]. *Journal of Liaoning University of Traditional Chinese Medicine*, 1-10.
- [21] Zhou Quan, Zhang Gaochuan, Zhang Jiamin, et al. Progress in Basic Research on Antihypertensive Effects of Medicinal and Edible Homologous Traditional Chinese Medicine[J]. *Modernization of Traditional Chinese Medicine and Materia Medica-World Science and Technology*, 2020, 27(01): 132-142.
- [22] Gong Ming. Research on the Material Basis and Mechanism of *Pueraria lobata* in Anti-Hypertension [D]. Jiangxi University of Traditional Chinese Medicine, 2024.
- [23] Liu Xiaocong, Zhang Yumiao, Pan Yalei. Advances in pharmacological action and clinical application of gastrodin [J]. *Central South Pharmacy*, 2024, 22(06): 1615-1620.
- [24] Luo Fengying, Liu Wang. Study on Antihypertensive and Synergistic Effect of Wind Medicine Fangfeng and Baizhi Combined with Tianma Gouteng Decoction on Hypertensive rats[J]. *Research of Integrated Traditional Chinese and Western Medicine*, 2018, 10(02): 75-79.
- [25] Ma Zhan, Cao Baoguo, Feng Jie, et al. Research Progress on the Mechanisms of Curcumin in Treating Hypertension [J]. *Henan Traditional Chinese Medicine*, 2020, 45(02): 310-316.
- [26] Yuan Yuan, Zhao Jun, Gao Huijing, et al. Experimental study on effect of hawthorn on compounding hypertension and hyperlipidemia rats [J]. *Journal of Xinjiang Medical University*, 2013, 36(1): 52-57.
- [27] Pan Zhengjun, Lu Qi, Pan Li, et al. Effects of Aqueous of *Cassia obtusifolia* on Blood Pressure, Blood Lipid and Renal Structure of Cold-induced Hypertensive Mice[J]. *Chinese Journal of Experimental Traditional Medical Formulae*, 2010, 16(13): 203-206;
- [28] Yu Zhuohang. Research on the Formula of Food and Medicine with Gastric Motility Promoting Effects [D]. Jiangnan University, 2023.
- [29] Zhu Hengyue, Ke Yuhe. Zhu H Y, KE Y H. The Mechanism of Taoren-Honghua in the Treatment of Myocardial Ischaemia Based on Network Pharmacology and Molecular Docking [J]. *Journal of Hubei Minzu University (Medical Edition)*, 2020, 42(01): 15-20.