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Original Article

Clinical effect of self-made "Huatan Huoxue prescription" for the treatment of unexplained vertigo: a randomized, open-label, positive-drug control trial

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Abstract: Objective: There is a lack of available treatments for vertigo of unknown origin. This study aimed to assess the efficacy of the "Huatan Huoxue prescription" for the treatment of unexplained vertigo. Methods: In this randomized, open-label, prospective, positive-drug control trial, 98 patients with vertigo of the phlegm-blood stasis syndrome type and of unknown origin were randomized to the traditional Chinese medicine (TCM) group and the Western medicine (WM) group (n=49/group). Patients in the TCM group received the "Huatan Huoxue prescription", while those in the WM group received flunarizine and betahistine. The TCM syndrome score scale (TCMSSS), dizziness handicap inventory (DHI), self-rating anxiety scale (SAS), self-rating depression scale (SDS), and autonomic symptom profile (ASP) were used to evaluate the efficacy in both groups at baseline, and at 1, 2, 3, 4, 8, 12, and 16 weeks. Results: Both treatments improved the TCMSSS, DHI, SAS, SDS, and ASP scores (all $P<0.001$). These scores in the TCM group were all better compared with the WM group after 4 weeks of treatment (all $P<0.05$). The effective rate of the TCM group was 95.9% compared with 87.8% in the WM group. No relevant adverse events were found during the trial. Conclusion: The self-made "Huatan Huoxue prescription" significantly improves vertigo symptoms, as well as the associated physical symptoms, anxiety, depression, and autonomic stimulation symptoms.

Keywords: Vertigo, Huatan Huoxue prescription, traditional Chinese medicine syndrome, anxiety, depression, autonomic nervous system

Introduction

Vertigo is one of the most common subjective symptoms encountered in clinic. It involves the cardiovascular, cerebrovascular, endocrine, tumor, otolaryngology, psychology, inflammation, and trauma disciplines, and its incidence increases with age [1]. Vertigo mainly manifests as motor hallucinations due to spatial disorientation, and the patients subjectively feeling rotation, movement, and shaking of the external environment or of themselves. In addition to vertigo symptoms, patients can also feel dizziness, confusion, disequilibrium, unsteadiness, deviation in pointing objects, irritability, fear, emotional instability, anxiety and depression symptoms, nausea, paleness, sweating, and other symptoms due to autonomic nerve stimulation [1, 2]. If these symptoms recur on a regular basis, they can affect the quality of life of the patients.

At present, there is a considerable number of patients reporting vertigo events, but those patients are not clearly diagnosed based on the diagnostic criteria of Western medicine (WM). They suffer from repeated or persistent and incurable subjective feelings (as listed above) accompanied by anxiety, depression, and autonomic nerve symptoms. The specific cause of their disease cannot be clarified using the available examination methods, leading to a lack of specific treatment. Most of these patients are given symptomatic treatment, during which misdiagnosis, missed diagnosis, and adverse events are common [1, 2].

In traditional Chinese medicine (TCM), most patients with vertigo are diagnosed with vertigo

of the phlegm-blood stasis syndrome type [3]. We anecdotally tested some effects of the self-made "Huatan Huoxue prescription" created by Professor Yang in the treatment of patients with phlegm-blood stasis syndrome type of vertigo and of unknown origin.

Since there is a lack of investigation about Huatan Huoxue treatment for vertigo, in this trial, an active intervention was conducted in patients with phlegm-blood stasis type of vertigo. The TCM syndrome score scale (TCM-SSS), Dizziness Handicap Inventory (DHI), self-rating anxiety scale (SAS), self-rating depression scale (SDS), and autonomic symptom profile (ASP) were used to evaluate the efficacy of the "Huatan Huoxue prescription" for the treatment of vertigo symptoms and the associated anxiety and depression, as well as autonomic symptoms.

Materials and methods

Patients

This was a randomized, open-label, prospective, positive-drug control trial, registered at chictr.org.cn (ChiCTR-IIR-17014006). Between May 2018 and April 2019, patients who manifested symptoms and signs of vertigo and visited the Otolaryngology Department, Neurology Department, or Chinese Traditional Medicine Department of the Chinese People's Liberation Army General Hospital were invited to participate in this trial. The inclusion criteria were: 1) symptoms of vertigo; 2) symptoms in line with the diagnostic criteria; 3) all relevant objective examinations and laboratory tests were normal; and 4) willing to participate in this study and could cooperate with treatment. The exclusion criteria were: 1) major diseases such as cardiogenic, metabolic, traumatic, infectious, severe organ dysfunction, or psychiatric diseases; 2) pregnant or lactating women; 3) people who could not receive the treatment for any reason; 4) combined treatment that was not allowed with the regimen; 5) or had participated in other clinical trials within the past 3 months.

This trial was in accordance with the Declaration of Helsinki and Chinese regulations on clinical trials [4, 5]. The protocol was approved by the Ethics Committee of the Chinese People's Liberation Army General Hospital. Each participant signed an informed consent before enrollment.

Diagnostic criteria

Patients were diagnosed referring to the TCM diagnostic criteria [6]. The TCM syndrome differentiation criteria for stagnation of turbid phlegm in middle-jiao and obstruction of the orifices by blood stasis are: 1) Stagnation of turbid phlegm in middle-jiao. The main symptoms are spinning of objects and head feeling heavy, as in a vise. The accompanying symptoms are chest tightness, nausea, vomiting, sputum, abdominal and epigastric fullness, loss of appetite, and listlessness. The tongue issues include plump tongue, with dental impressions on the margin, and whitish greasy coating. The pulse conditions are thread and slippery. 2) Obstruction of the orifices by blood stasis. The main symptoms are frequent vertigo and intense headache, such as stabbing pain. The accompanied symptoms are dark face, purple dark tongue and lips, scaly skin, amnesia, palpitation, insomnia, tinnitus, and deafness. The tongue can look purplish and dim, with petechiae and ecchymosis. The pulse is taut and uneven, or small and uneven.

Regarding WM, all relevant objective examinations and laboratory tests returned normal results. These patients were diagnosed as vertigo with unknown origin.

Randomization and blinding

SPSS software was used to generate two sets of random numbers (100 in each set). The patients who met the inclusion and exclusion criteria were numbered according to the order of treatment, and the patient number corresponded to the random number. The patients were randomly allocated to the TCM and WM groups. This was an open-label study. Both the patients and physicians knew the grouping.

Treatments

Patients in the TCM group were given the self-made "Huatan Huoxue prescription". The decoction, based on the classic prescription of phlegm, Erchen Tang, is made by Prof. Yang and adjusted by clinical experience. The composition was: 5 g of Wuzhu Yu (*Euodia ruticarpa*), 10 g of Gao Ben (*Rhizoma ligustici*), 10 g of Ze Xie

(*Alisma plantago-aquatica*), 15 g of Bai Zhu (*Atractylodes macrocephala*), 10 g of Ban Xia (*Pinellia ternate*), 15 g of Sheng Jiang (*Zingiber officinale*), 16 g of Chen Pi (*Citrusreticulata blanco*), 20 g of Fu Ling (*Wolfiporia cocos*), 6 g of Zhigan Cao (*Radixglycyrrhizae preparata*), 20 g of Dan Shen (*Salvia miltiorrhiza bunge*), 10 g of Chuan Xiong (*Ligusticum chuanxiong hort*), 20 g of Chi Shao (*Radix paeoniae rubra*), 10 g of Chai Hu (*Radix bupleuri*), and 15 g of Huang Qin (*Baical skullcap Root*). All Chinese herbal medicines were provided by the pharmacy of the Chinese People's Liberation Army General Hospital. The quality and safety of each herbal medicine is guaranteed by the traditional Chinese pharmacist with National Certification. All ingredients were soaked in water for 1 h, then decocted with 200 mL of water twice in the morning and evening separately, and were administered warm. According to the principle of TCM syndrome differentiation, the decoction was adjusted according to the patient's condition at each visit. All herbal medicine was collected and distributed uniformly on the same day by the pharmacy.

In the WM group, the patients were given flunarizine hydrochloride capsules 10 mg/qn (Sibelium, Xi'an Janssen Pharmaceutical Co., Ltd., SFDA approval No. H10930003) and betahistine mesilate tablets 12 mg/tid (Merislon, Eisai (China) Inc., SFDA approval No. H20040130).

Data collection

Baseline characteristics including sex, age, body mass index (BMI), smoking, drinking, and education level were collected using a questionnaire when the patients were enrolled. Severity of vertigo referred to the vertigo classification standard [2]: grade 0, no vertigo attack or has stopped; grade I, the daily activities are not affected during and after vertigo; grade II, the daily activities are forced to stop during the attack, and recover soon after attack; grade III, most of the daily activities can be controlled after the attack; grade IV, most of the daily activities cannot be controlled after the attack; and grade V, all of the daily activities cannot be controlled after the attack and there is a need for another person's help. Grades 0-I were mild, grades II-III were moderate, and grades IV-V were severe.

TCMSSS was evaluated according to the guiding principles of clinical research on new drugs of TCM [7]. It contains 20 items: one for main symptoms, five for secondary symptoms, and 14 for accompanied symptoms. The total score is 42, where higher scores indicate more severe disease. The main symptoms are scored 0, 2, 4, and 6 points, and the secondary and accompanied symptoms are scored 0, 1, 2 and 3 points.

For DHI [8]: "No" is scored 0, "Yes" is scored 4 points, and "Maybe" is scored 2 points. The score ranges 0-100 points, where the higher the score, the more serious the dysfunction is.

For SAS [9], standard scores of <50, 50-60, 61-70, and >70 points refer to normal, mild, moderate, and severe anxiety, respectively.

For SDS [10], indexes of <50, 50-59, 60-69, and ≥70% indicate no depression symptoms, mild depression, moderate depression, and major or severe depression, respectively.

For ASP [11], 11 aspects were inquired in each patient: standing tolerance, vasomotor, endocrine, diarrhea, constipation, gastroparesis, sexual function, sleep, bladder function, pupil movement, and reflex syncope. A score of ≤22 is normal and >22 points is abnormal. Among them, sexual function, pupil movement, and reflex syncope were excluded due to inaccurate determination by the patients.

To ensure the integrity of the data, the response rate to the items of the scale had to be 100%. The recovery rate of the scale samples had to be >80%. Rating was supervised by the investigators.

Endpoints and follow-up

The primary endpoint was the improvement of the symptoms of vertigo based on TCMSSS and DHI. The secondary endpoints were the improvement of anxiety, depression, and autonomic nervous symptoms accompanying vertigo symptoms based on SAS, SDS, and ASP. The questionnaires were given at baseline, and after 1, 2, 3, 4, 8, 12 and 16 weeks of treatment. All patients were followed up by phone or outpatient visit.

Before and after the trial, the patients underwent routine blood, urine, stool, and liver and kidney functional examinations. The adverse events were recorded according to the common terminology criteria for adverse events (CTCAE), version 4.0.

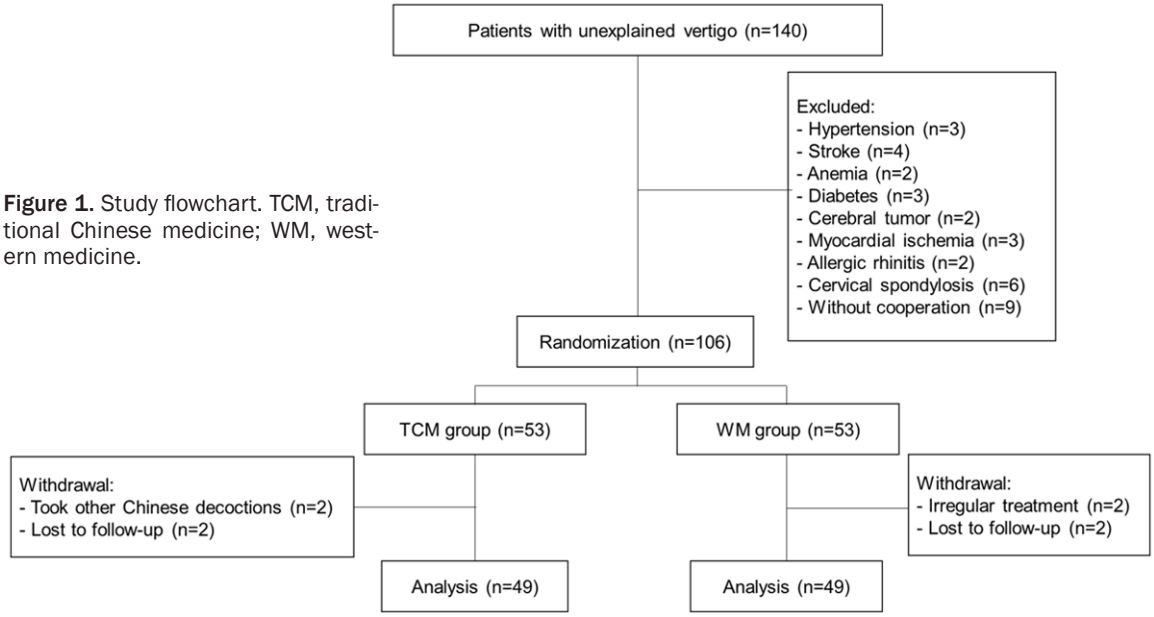

Figure 1. Study flowchart. TCM, traditional Chinese medicine; WM, western medicine.

Statistical analysis

Based on the literature [12, 13], on previous clinical experience and studies, and on statistical experts, the SAS software (SAS Institute, Cary, NY, USA) was used to establish the first overall rate (estimated value) π^1=70%, and the second overall rate (estimated value) π^2=95% by taking α=0.05 (one-sided) and a power of 90%, resulting in a sample size of 36 in each group, plus 15% estimated drop-out rates, for a total sample size of 84.

Statistical analyses were performed using SPSS 13.0 (SPSS Inc., Chicago, IL, USA). Data were analyzed according to the per-protocol set. Continuous variables were expressed as means ± standard deviation and compared between groups using the Student t test. Categorical variables were expressed as frequencies (percentage) and compared between groups using the chi-square test. Data for the clinical outcomes were analyzed using repeated measurement data analysis of variance. P<0.05 was considered statistically significant.

Results

Patients

The patient flowchart is shown in **Figure 1**: 140 patients were enrolled, from which 25 were excluded because they met the exclusion criteria and nine were excluded because they did not receive the required treatment. Four patients in the TCM and WM groups were lost in follow-up or were withdrawn during treatment. Therefore, there were 49 patients in each group.

Baseline characteristics

In the TCM group, there were 17 males and 32 females, 50.5±14.4 years of age. BMI was 23.4±3.5 kg/m^2. The severity of vertigo was mild in nine, moderate in 30, and severe in 10. In the WM group, there were 14 males and 35 females, 48.0±12.5 years of age. BMI was 22.7±3.3 kg/m^2. The severity of vertigo was mild in 13, moderate in 24, and severe in 12. There were no significant differences in baseline characteristics between the two groups (all P>0.05) (**Table 1**).

Questionnaire results

The response and recovery rates of all questionnaires were all 100% for both groups. Results are shown in **Table 2** and **Figure 2**.

There were no significant differences in TCM-SSS scores at baseline, 1 week, and 2 weeks between the two groups (all P>0.05), while there were significant differences after 3, 4, 8, 12, and 16 weeks of treatment between the two groups (all P<0.05). The two scores before and after treatment showed significant differences within the two groups (all P<0.001). These results showed that both treatments

Table 1. Baseline characteristics of the participants

Variables	TCM (n=49)	WM (n=49)	t/χ^2	P
Age (years)	50.5±14.4	48.0±12.5	0.946	0.347
Gender, n (%)			0.425	0.515
Male	17 (34.7)	14 (28.6)		
Female	32 (65.3)	35 (71.4)		
BMI (kg/m^2)	23.4±3.5	22.7±3.3	1.040	0.301
Smoking, n (%)	14 (28.6)	15 (30.6)	0.049	0.825
Drinking, n (%)	16 (32.7)	22 (44.9)	1.547	0.214
Education level, n (%)			0.679	0.712
Middle school	22 (44.9)	18 (36.7)		
High school	12 (24.5)	14 (28.6)		
College	15 (30.6)	17 (34.7)		
Severity, n (%)			1.576	0.455
Mild	9 (18.4)	13 (26.5)		
Moderate	30 (61.2)	24 (49.0)		
Severe	10 (20.4)	12 (24.5)		

TCM, traditional Chinese medicine; WM, western medicine; BMI, body mass index.

were effective, and that the curative effect in the TCM group was better than in the WM group after the 3rd week (**Table 2** and **Figure 2A**).

There were no significant differences in DHI scores at different time points between the two groups (all P>0.05), but the pre-treatment and post-treatment DHI scores showed significant difference within both groups (P<0.001). These results suggested that evaluation using this scale showed effective treatment in both groups, but that both treatments were comparable (**Table 2** and **Figure 2B**).

SAS and SDS scores before treatment and after 1 week of treatment did not show significant differences between the two groups (both P>0.05), while those at 2, 3, 4, 8, 12, and 16 weeks of treatment showed significant differences between the two groups (all P<0.05). In addition, the two scores before and after treatment showed significant differences within the two groups (P<0.001). These results indicate that anxiety and depression were improved in both groups, and that the curative effect in the TCM group was better than in the WM group (**Table 2** and **Figure 2C**, **2D**).

The ASP score before treatment did not show significant difference between the two groups (P=0.974), but those after 1, 2, 3, 4, 8, 12, and 16 weeks of treatment showed significant differences between the two groups (all P<0.05). In addition, the ASP scores before treatment showed significant differences compared with after treatment in both groups (P<0.001). These results suggest that the treatment was effective in improving autonomic symptoms, and the curative effect in the TCM group was better than in the WM group (**Table 2** and **Figure 2E**).

Adverse events

No adverse events occurred during treatment, and all patients did not show any abnormalities in laboratory indexes.

Discussion

Vertigo is a common clinical subjective symptom. According to modern medicine, the etiology of the vertigo is complicated and about 2000 primary or secondary factors can induce vertigo [1, 2, 14]. Due to differences in inclusion criteria, the research and understanding of vertigo by scholars from different countries are different [12, 15]. In addition to vertigo itself, other symptoms are often present and include anxiety, depression, dizziness, and autonomic nerve stimulation [13, 16, 17]. In about 70-80% of patients with vertigo it can be confirmed or clearly defined by an effective inquiry [18], but for many patients with vertigo, it is still difficult to identify the etiology and to confirm the diagnosis. Nevertheless, irrespective of whether an etiology is found or not, vertigo greatly influences the mental, social activities, and life quality of patients [4, 19].

In WM, vertigo is mainly managed using vestibular suppressants, antiviral medication, and antiemetic medications, according to the etiology (if any is identified) or signs and symptoms. Treatment approach is also different according to peripheral or central dizziness, and according to the subtypes for each. Vestibular neuronitis is usually caused by reactivation of the herpes simplex virus, and is usually treated using anti-emetics and vestibular suppressants [20]. For benign paroxysmal positioning vertigo, the most effective course of action is canalith repositioning using the Epley, Semont, Lempert, or Hamid maneuver, while medication

Table 2. Clinical outcomes between TCM group and WM group at different follow-up

TCMSSS								
Time	0 w	1 w	2 w	3 w	4 w	8 w	12 w	16 w
TCM (n=49)	34.2±8.0	33.6±6.9	27.3±6.8	14.3±8.7	8.9±6.1	6.4±5.1	6.3±5.0	6.3±5.0
WM (n=49)	34.2±8.0	33.6±7.9	29.2±8.1	22.5±10.3	13.0±9.9	11.7±9.5	11.7±9.5	11.7±9.6
t	0.015	<0.001	1.618	17.999	6.027	12.013	12.202	10.091
P	0.904	0.989	0.206	<0.001	0.016	0.001	0.001	0.001
DHI								
Time	0 w	1 w	2 w	3 w	4 w	8 w	12 w	16 w
TCM (n=49)	46.5±14.4	46.3±14.3	34.8±11.5	17.4±13.7	6.2±8.7	3.2±6.9	3.0±6.9	3.0±6.9
WM (n=49)	47.9±17.4	47.4±17.5	38.0±15.7	26.2±20.9	8.8±16.2	5.9±14.1	5.8±14.0	5.8±14.0
t	0.185	0.109	1.286	6.162	1.027	1.490	1.644	1.644
P	0.668	0.743	0.260	0.015	0.314	0.225	0.203	0.203
SAS								
Time	0 w	1 w	2 w	3 w	4 w	8 w	12 w	16 w
TCM (n=49)	63.3±7.2	60.6±7.9	50.0±7.5	39.2±7.8	32.1±5.3	30.1±3.5	30.0±3.5	30.4±4.2
WM (n=49)	60.9±7.8	60.5±7.7	54.7±8.6	46.2±10.4	36.5±9.9	35.4±9.8	35.1±9.7	35.1±9.7
t	2.486	0.004	8.271	14.520	7.461	12.581	12.142	10.061
P	0.118	0.948	0.005	<0.001	0.008	0.001	0.001	0.002
SDS								
Time	0 w	1 w	2 w	3 w	4 w	8 w	12 w	16 w
TCM (n=49)	62.8±6.9	61.4±6.4	51.1±7.0	39.2±7.9	32.2±5.5	30.2±3.5	30.1±3.4	30.5±4.1
WM (n=49)	60.9±6.9	60.6±6.7	55.0±7.0	46.4±11.4	35.8±10.9	35.0±10.8	34.6±10.9	34.6±10.9
t	1.852	0.400	7.799	13.208	4.127	8.773	7.632	6.251
P	0.177	0.528	0.006	<0.001	0.314	0.004	0.007	0.014
ASP								
Time	0 w	1 w	2 w	3 w	4 w	8 w	12 w	16 w
TCM (n=49)	39.6±5.6	35.4±6.0	27.2±6.7	16.8±8.5	11.1±5.9	9.2±4.5	9.2±4.5	9.5±4.8
WM (n=49)	39.6±6.6	38.0±6.7	32.2±6.8	16.8±8.5	17.5±10.0	16.6±9.7	16.6±9.7	16.6±9.7
t	0.001	4.113	13.727	22.309	15.218	22.805	22.805	20.860
P	0.974	0.045	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

TCM, traditional Chinese medicine; WM, western medicine; TCMSSS, traditional Chinese medicine syndrome score scale; DHI, Dizziness Handicap Inventory; SAS, self-rating anxiety scale; SDS, self-rating depression scale; ASP, autonomic symptom profile.

can be effective for short-term symptoms, but not on the long term [21]. Meniere's disease is a disorder of the inner ear that can be treated using salt restriction, diuretics, and corticosteroids [22]. Patients with autoimmune inner ear disease are usually treated using corticosteroids [23]. Migraine is the most common central dizziness and is treated using prophylactic and abortive medications, and changes in lifestyle [24]. Transient ischemic attacks do not require special treatments unless there is a fair risk of progressing to stroke [25]. Stroke of course requires acute treatments in order to prevent permanent damage [26]. On the other hand, there is no uniform treatment for unexplained vertigo and the symptoms are usually treated tentatively, usually using vestibular suppressants and anti-emetics [27]. Therefore, treatment of patients with unexplained vertigo is often symptomatic, so the effect is not good and the condition recurs easily.

Based on the ancient Chinese literature, vertigo is a mixture of deficiency and enrichment. The location of vertigo is the brain. Deficiency is associated with liver, spleen, and kidney, and enrichment is associated with wind, fire, phlegm, and stasis [28, 29]. TCM divides vertigo in four categories: 1) hyperactivity of kidney yang, for which the standard treatment is Gastrodia and Uncaria combination; 2) retention of turbid phlegm in the middle burner, for

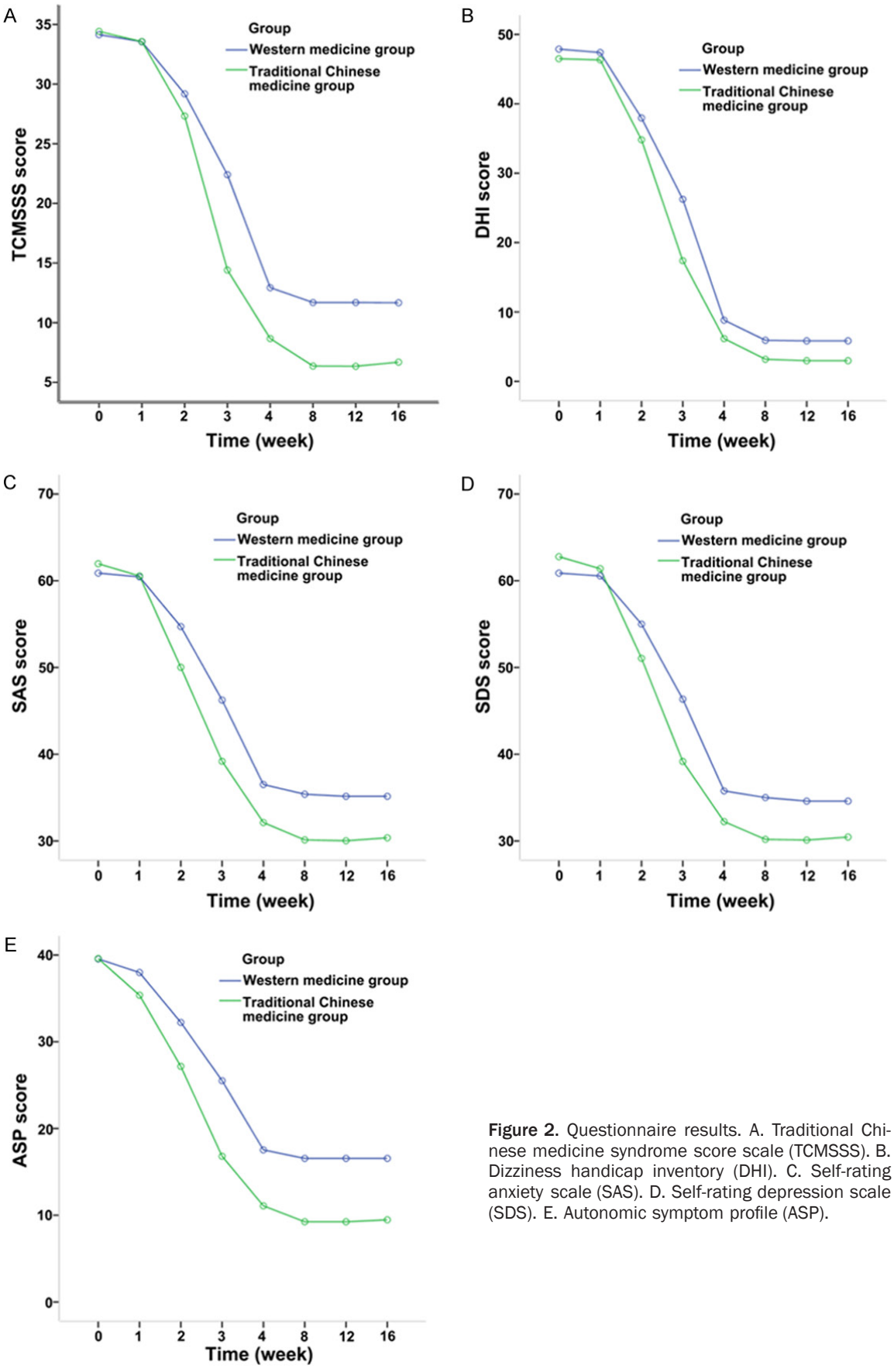

Figure 2. Questionnaire results. A. Traditional Chinese medicine syndrome score scale (TCMSSS). B. Dizziness handicap inventory (DHI). C. Self-rating anxiety scale (SAS). D. Self-rating depression scale (SDS). E. Autonomic symptom profile (ASP).

which the standard treatment is Pinellia and Gastrodia combination; 3) deficiency of kidney essence (yin), for which the standard treatment is Rehmannia Six Formula or Zuogui Wan; and 4) deficiency of qi and blood, for which the standard treatment is Ginseng and Longan combination [28-31].

Because there is a lack of available treatments for vertigo of unknown origin, Professor Yang wanted to make up for the gap and deficiency through TCM. Through years of clinical research, he gained a deep understanding of the etiology and pathogenesis of vertigo in TCM and WM. Regarding TCM, he suggests that the primary cause of vertigo is determined by the deficiency of spleen and stomach, which can make the illnesses influencing other organs, contracting other pathogenic factors, being invaded by exogenous evils, and causing deficiency-excess complex. The theory of "Spleen stomach weakness, phlegm and blood stasis" should be grasped through all the process of clinical syndrome differentiation as the main pathogenesis. The principle of treatment can be located in regulating spleen and stomach, reducing phlegm and blood stasis. Enrichment can be cured firstly by dispelling pathogenic wind and eliminating phlegm and blood stasis, and secondly by reinforcing the spleen and stomach viscera. Deficiency can be cured by both benefiting and attacking principles. On the theory of WM, Professor Yang suggests that the occurrence and development of vertigo is caused by abnormal regulation of corresponding nerve function. Some studies showed that vertigo symptoms are often accompanied by complaints of anxiety, depression [32] and somatization [33, 34]. The degree of anxiety and depression in patients with impaired vestibular function is significantly higher than that in normal subjects [35], while the incidence of vertigo and balance dysfunction in patients with anxiety disorder was also higher than that in other populations [36]. This may be related to the corresponding brain anatomy [37, 38]. Vestibular organs and vestibular nuclei are associated with many emotional nuclei [39]. The parabrachial nucleus secretes norepinephrine, 5-hydroxytryptamine and dopamine, locus coeruleus mainly secretes norepinephrine, dorsal raphe nucleus mainly secretes 5-hydroxytryptamine, central amygdala and inferior marginal cortex mainly secretes dopamine. In addition, it is also related to the hippocampus, frontal lobe, dentate gyrus, etc. According to earlier literature reports, autonomic nervous dysfunction is the basis of vertigo [40]. Autonomic nerve regulation is controlled by both sympathetic and vagal nerves, vagal nerve tension is reduced, and the coordination between sympathetic and vagal nerves is unbalanced. It can cause anxiety and depression symptoms, accompanied by nausea, upper abdominal discomfort, nausea, vomiting, sweating, nausea. Palpitation, tinnitus, emotional instability, insomnia and other symptoms of autonomic nervous disorders.

Professor Yang also has many years of clinical experiences in the treatment of patients with vertigo, and created the theory of the "Huatan Huoxue prescription" based on the ancient literature of TCM and summing up the vertigo treatments. From this "Huatan Huoxue prescription", Ban Xia, Chen Pi, Fu Ling, and Zhigan Cao are used to tonify the spleen and eliminate phlegm and dampness. Wuzhu Yu and Sheng Jiang are used to warm the spleen and stomach, dispel cold, relieve pain, lower the adverse qi of stomach, and prevent vomiting. Ze Xie and Bai Zhu are used to tonify the spleen and induce diuresis. Gao Ben and Chuan Xiong are used to guide the medicine to go upstream, dispel wind, eliminate dampness, and relieve pain. Dan Shen and Chi Shao are used to promote blood circulation and nourish the blood. Chai Hu and Huang Qin are used to sooth the liver and harmonize Shaoyang [6]. The whole prescription eliminates phlegm and dampness through up-, middle-, and bottom-jiao with combination of tonification and purgation, and has a significant efficacy.

The present study mainly suggests that the self-made "Huatan Huoxue prescription" shows remarkable effect during outpatient treatment of patients with phlegm-blood stasis syndrome type of vertigo with unknown origin, and this study aimed at the investigation of the vertigo patients with normal laboratory examination results, without any specific etiology and diagnosis. The results strongly suggest that the self-made "Huatan Huoxue prescription" can significantly improve vertigo symptoms, as well as the associated physical symptoms, anxiety, depression, and autonomic stimulation symptoms.

The results of the five questionnaires suggest that regarding symptom improvement, the TCM group is at least equivalent to the WM group. Second, regarding the improvement of anxiety, depression, and autonomic nerve stimulation symptom, the TCM group is superior compared with the WM group. In this study, TCMSSS was used to evaluate the efficacy of the drugs and showed that the improvement in the TCM group was better than in the WM group. Using the DHI, the results of the two groups were equivalent, probably because the TCMSSS and DHI focus on different aspects. Indeed, TCMSSS focuses on the investigation of the TCM symptoms of phlegm-blood stasis such as turbid phlegm (head heavy as if swathed, chest tightness, nausea, vomit, sputum, abdominal distension, poor appetite, and fatigue) and blood stasis (pricking headache, dark purple face and lips, scaly dry skin, forgetfulness, palpitation, insomnia, tinnitus and deafness), while DHI focuses on the patient's physical quality, emotion, and function such as posture-related symptoms (looking up, the rapid movements of the head, turning over in bed, and stoop), subjective feelings (frustration, insecurity, fear, and depression), and social factors (social communication, work, and family responsibilities).

Of course, the present study has limitations. This study was only a preliminary clinical trial performed in a small group of patients and from a single center. In addition, the specific pathways and mechanisms of TCM prescriptions need to be studied.

In conclusion, the self-made "Huatan Huoxue prescription" could significantly improve vertigo symptoms, as well as the associated physical symptoms, anxiety, depression, and autonomic stimulation symptoms. Additional study is necessary to support these results.

Disclosure of conflict of interest

None.

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