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Efficacy observation of acupoint application combined with psychological intervention in elderly patients with mild liver-qi stagnation depression

Посматрање ефикасности примене акупунктурних тачака у комбинацији са психолошком интервенцијом код старијих пацијената са благом депресијом типа *qi* стагнације јетре

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Посматрање ефикасности примене акупунктурних тачака у комбинацији са психолошком интервенцијом код старијих пацијената са благом депресијом типа *qi* стагнације јетре

SUMMARY

Introduction/Objective The objective was to propose a safer and more effective treatment method for mild liver-qi stagnation syndrome depression in elderly patients.

Methods A total of 70 elderly patients were recruited from the outpatient or inpatient departments of our hospital between July and December 2022 and were randomly divided into two groups, with 35 in each. The control group received sertraline, and the observation group received acupuncture point application combined with psychological intervention. The course of treatment was 10 days for 4 consecutive courses of treatment. Following courses 1, 2 and 4, the patients' Hamilton Depression Scale (HAMD-24) scores were compared. Statistical analysis was performed using the paired t-test and the chi-square test.

Results After the end of courses 1, 2 and 4, the traditional Chinese medicine syndrome scale and total HAMD-24 scores were lower in the observation group than in the control group ($p < 0.01$, $p < 0.05$).

Conclusion The acupoint application combined with psychological intervention has a rapid and significant effect and fewer adverse effects in liver-qi depression.

Keywords: depression; acupoint application; psychological intervention; liver qi stagnation type

САЖЕТАК

Увод/Циљ Циљ овог истраживања био је да се предложи безбеднији и ефикаснији метод лечења блажег синдрома депресије *qi* стагнације јетре код старијих болесника.

Методе Учествовало је 70 старијих болесника из амбулантних и болничких одељења наше болнице у периоду од јула до децембра 2022. године, и насумично су подељени у две групе, са по 35 пацијената у свакој. Контролна група је добијала сертралин, док је посматрана група добијала примену акупунктурних тачака у комбинацији са психолошком интервенцијом. Третман је трајао 10 дана у оквиру 4 узастопна циклуса лечења. Након првог, другог и четвртог циклуса упоређивани су резултати болесника на Хамилтоновој скали депресије (*HAMD*-24). Статистичка анализа је спроведена коришћењем *t*-теста за зависне узорке и теста χ^2.

Резултати На крају првог, другог и четвртог циклуса, скала синдрома традиционалне кинеске медицине и укупни *HAMD*-24 резултати били су нижи у посматраној групи у поређењу са контролном групом ($p < 0,01$, $p < 0,05$).

Закључак Примена акупунктурних тачака у комбинацији са психолошком интервенцијом има брз и значајан ефекат са мање нежељених ефеката код депресије типа *qi* стагнације јетре.

Кључне речи: депресија; примена акупунктурних тачака; психолошка интервенција; *qi* стагнација јетре

INTRODUCTION

With the aging population in China, the elderly account for a huge proportion of the total population. Widowhood, living alone and illness among the elderly are gradually increasing, enhancing their risk of mental health disorders, with depression particularly prominent [1]. Depression not only reduces the quality of life and happiness index of the elderly but also forms a vicious cycle with physical diseases such as hypertension, coronary heart disease and cancers, and even leads to disability or death, thus bringing a heavy burden to families and society [2, 3]. Severe depression poses a risk of self-harm and suicide [4]. Sertraline is the most commonly used antidepressant treatment in clinics, and its efficacy has been confirmed. However, sertraline tablets can cause a variety of adverse reactions, such as dizziness, fatigue and dry mouth,

with high incidences. In addition, the patients' compliance is low, and the therapeutic difficulty is high [5]. Acupoint application is adopted in traditional Chinese medicine (TCM) and is highly safe and generally does not induce side effects. Moreover, the drugs used are low-cost, contributing to suitability for long-term use and easy promotion. On this basis, the present study compares the clinical efficacy of acupoint application combined with psychological intervention in treating the elderly with mild depression due to liver-qi stagnation syndrome, to identify a safer and more effective therapeutic method.

METHODS

General data

Through a randomised controlled trial, a total of 70 elderly patients with depression due to liver-qi stagnation syndrome were recruited from the outpatient or inpatient departments of Jiangxi Provincial Institute of Traditional Chinese Medicine between July and December 2022. They were divided into two groups using a random number table, with 35 patients in each group. The entire intervention process for the observation group was conducted in our hospital.

This study was based on the sample size calculation formula for comparing means between the two groups: power (1-βerrprob) = 0.90, with alpha = 0.05. The sample size ratio in the two groups was 1:1. Based on a previous study [6], the effect size (δ) was set as 1.6 and the standard deviation (σ) as 2.15. The results showed that the sample size of the observation group should be 28 and that of the control group also 28, with a total sample size of 56. The loss to follow-up rate was calculated at 20%, meaning at least 35 patients were required for both the control group and the observation group, totalling 70 patients.

Diagnostic criteria

The TCM diagnosis was based on the diagnostic criteria for depression of liver-qi stagnation syndrome in the *Criteria of Diagnosis and Therapeutic Effect of Diseases and Syndromes in Traditional Chinese Medicine* [7]:The psychiatric symptoms included the following: (1) depression, fatigue and weakness; (2) suicidal thoughts/behaviours and sense of despair; (3) anxiety and irritability; (4) inhibition of thought; and (5) slowness of movements. The physical

symptoms were as follows: (1) dull complexion; (2) sternocostal fullness; and (3) dark purplish tongue with ecchymosis and white coating as the main symptom. Western medicine diagnosis was based on the diagnostic criteria for single or repeated episodes of depression in the *Chinese Classification and Diagnostic Criteria of Mental Disorders* published in 2001 [8].

Inclusion and exclusion criteria

The inclusion criteria were as follows: (1) according to the doctor's diagnosis, the total Hamilton Depression Scale (HAMD-24) score was >8 and <20, and the condition was diagnosed as depression of liver-qi stagnation syndrome in TCM; (2) patients aged 60–80 years; (3) patients willing to voluntarily participate in the trial and able to understand the scale content and fully cooperate with the treatment; and (4) patients and their families who provided informed consent. The exclusion criteria included: (1) patients diagnosed with severe psychiatric disorders by a specialist, and with recent self-harm or suicidal tendencies; (2) patients with severe internal diseases (doctor-diagnosed diseases that can affect emotions, such as coronary heart disease, cirrhosis, asthma); (3) patients with alcohol or drug dependency within 1 year [8]; (4) patients undergoing antidepressant treatment in the last month; and (5) patients who did not sign the informed consent form or who could not cooperate with the treatment.

Therapeutic methods

Control group

Sertraline was given orally at a regular dose of 50 mg/tablet once a day, in the morning or evening, before or after meals. The initial dose of 50 mg/d was adjusted according to the changes in the condition, with a maximum of 200 mg/d. The interval between dose adjustments was less than 1 week. The onset of the effect occurred within 7 d, but it took longer to fully exert its effect. The patients' reactions were observed 2–3 weeks after administration to adjust any medical advice, and the adverse reactions were recorded [9]. The therapeutic drug and its dose were adjusted by a psychiatrist based on the condition, and the occurrence of adverse reactions was recorded.

Observation group: acupoint application

Based on the clinical symptoms of the patients, acupoints were selected by local acupoint selection, distant acupoint extraction and syndrome differentiation-based acupoint selection, including *Shenmen*, double *Shenshu*, double *Ganshu*, double *Pishu*, double *Zusanli*, double *Xinshu* and double *Taichong*. The medicines for acupoint application were composed of *Codonopsis pilosula* (200 g), *Astragalus membranaceus* (300 g), *Ligusticum wallichii* (200 g), *Rhizoma atractylodis* (150 g), borneol (200 g), *Euphorbia kansui* (100 g), *Asarum heterotropoides* (100 g) and white mustard seed (100 g), which were crushed into a powder and well mixed with Vaseline to make a 2 × 2 cm medicine cake with a thickness of 0.5 cm. It was applied for 3–4 h/d, with 10 d as a course of treatment for 4 consecutive courses of treatment. The patients were followed up every 10 d to assess their TCM syndrome and HAMD scores [10].

Psychological intervention

In terms of cognitive intervention, by communicating with the patients and their family members, they were helped to correctly and rationally understand possible discomforts and therapeutic measures, correct their misconceptions about depression, master coping skills, reduce their cognitive misunderstandings and improve their adaptability. The onset, outcome and prognosis of depression were introduced, and health manuals relevant to the disease were distributed and carefully interpreted. Health classes, knowledge lectures and health consultations were organised to provide the patients with a comprehensive understanding of the disease and its treatment [11]. For the psychological intervention, guidance was conducted through adopting targeted intervention plans to help the patients establish correct cognitive patterns and to guide them to engage in relaxation training. The patients were encouraged to communicate with other patients with good recovery, and those who were undergoing psychological intervention were asked to share their recovery experience.

In terms of family intervention, full use was made of the family and social support systems. Family members were encouraged to participate in the rehabilitation treatment of the patients, providing psychological support and life assistance and encouraging them to communicate more to obtain spiritual help and support from their families, to stimulate their confidence in life and their attachment to their families, and establish confidence in overcoming the disease. The patients were also encouraged to communicate with people around them and participate in

group activities, and were assisted in cognitive reconstruction. In addition, the inner world of the patients was empathised with and the information conveyed by them was more accurately grasped, especially meaningful emotional messages implicit in language. The elderly should recognise that excessive worry and fear can only accelerate aging. They should be open-minded, try to look on the bright side and respect others' values, outlooks on life and lifestyles. Many elderly people develop depression due to loneliness, meaning they can tend to shut themselves off at home and become unwilling to communicate with others. Children should encourage the elderly to participate in group activities, which can help alleviate this unhealthy psychology [12].

Evaluation criteria

The HAMD-24 scale [13] was used to assess the depression status of the two groups before and after treatment. A higher score indicated worse psychiatric symptoms. The TCM efficacy was evaluated with reference to the evaluation criteria for efficacy in the depression of heart and spleen deficiency syndrome proposed in the *Criteria of Diagnosis and Therapeutic Effect of Diseases and Syndromes in Traditional Chinese Medicine* [7]. Here, 'cured' meant the symptoms and signs had disappeared, or had essentially disappeared, and the syndrome score had decreased by >90%; 'remarkably effective' meant the clinical symptoms and signs were improved significantly and the syndrome score had decreased by >70%; 'effective' meant the clinical symptoms and signs were improved and the syndrome score had decreased by >30%; and 'invalid' meant the symptoms and signs were not improved significantly or were aggravated and the syndrome score had decreased by <30%. The formula for the TCM syndrome integral was (pre-treatment score − post-treatment score) / pre-treatment score × 100%.

Statistical analysis

All the data were statistically analysed using SPSS 16.0 software. The Kolmogorov–Smirnov method was used for the test of normality. The measurement data conforming to the normal distribution were expressed as mean ± standard deviation ($\bar{x} \pm s$) and analysed using the paired *t*-test. The enumeration data were expressed as *n* (%) and analysed using the chi-square (χ^2) test. A *P*-value of <0.05 was considered statistically significant.

Ethics approval and consent to participate

This study was conducted in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of Jiangxi Provincial Institute of Traditional Chinese Medicine (batch number: 20220520). Written informed consent was obtained from all participants.

RESULTS

There were 16 men and 19 women in the observation group, and 14 men and 21 women in the control group. The mean age in the observation group was 67 ± 7 years and the course of disease was 47 ± 6 d. In the control group, the mean age was 69 ± 5 years and the course of the disease was 49 ± 5 d. Overall, the participants were aged 58–82 years, with a minimum medical history of 14 days and a maximum of 68 days. There were no statistically significant differences in basic data (e.g. gender) between the two groups (all $P > 0.05$), indicating comparability, as shown in Table 1.

Following treatment, the total effective rate of TCM syndrome in the observation group was higher than that in the control group. The total effective rate was 97.2% in the observation group and 91.4% in the control group, with a statistically significant difference ($P < 0.05$), as shown in Table 2.

No statistically significant difference was found in the HAMD-24 score between the two groups before treatment ($P > 0.05$), indicating comparability. After each course of treatment, the HAMD-24 score was improved. However, after 4 courses of treatment, the observation group had a significantly lower HAMD-24 score compared with the control group, with 8.73 ± 6.21 in the former and 16.23 ± 6.26 in the latter, presenting a statistically significant difference ($P < 0.05$) (Table 3).

Adverse reactions

Adverse reactions are defined as symptoms that do not occur before taking medication but do occur after taking medication. Compared with the control group, the incidence of adverse

reactions in the observation group was lower, with an overall incidence of 2.9% in the latter and 91.4% in the former, indicating a statistically significant difference ($P < 0.05$), as shown in Table 4.

DISCUSSION

From a holistic perspective, TCM holds that depression is an emotional disease that can be classified into the category of 'depression syndrome', with liver-qi stagnation syndrome and liver-kidney yin deficiency syndrome the most common forms. Acupoint application therapy is a TCM treatment method that involves external treatment through applying medicines on certain acupoints to treat diseases through the interaction of medicines and acupoints [14]. As a unique external treatment for internal diseases in TCM, acupoint application acts on the outermost layer of the skin of the meridian system, stimulating acupoints and meridian qi. Through the body surface-acupoint-meridian-visceral system, the medicines are delivered from the surface to the interior through the skin, and to the viscera along the meridians, exerting dual therapeutic effects to regulate the qi, blood, yin and yang of the viscera, and ultimately achieving the goal of treating depression [15].

In the present study, *Codonopsis pilosula* was used in the application. This is the principal medicine that can benefit qi, nourish blood and promote fluid production, and is compatible with *Astragalus membranaceus*, which has the function of warming and replenishing qi. *Ligusticum wallichii* can promote blood circulation, dissipate blood stasis, dissolve lumps and promote qi circulation, *Rhizoma atractylodis* is fragrant and can eliminate dampness and invigorate the spleen, whereas borneol can not only promote the percutaneous absorption of medicines but also prevents local skin infections. The warm acrid mobile and penetrating medicines, *Euphorbia kansui*, *Asarum heterotropoides* and white mustard seed, were used to drive away the cold in the body, thereby regulating, mobilising and improving the physiological functions of the heart, spleen and kidney, and revitalising the body's positive qi [16].

The results showed that after 4 courses of TCM acupoint application, the patients' depressive state could be significantly improved, suggesting that acupoint application can activate the aforementioned medicines through meridian acupoints and regulate body function, thereby effectively improving depression and other relevant symptoms in elderly patients. Compared with the control group, the incidence of adverse reactions in the observation group was lower,

which indicated that acupoint application combined with psychological intervention therapy has high safety. Zhang et al. [17] used acupoint application combined with psychological intervention to treat patients with post-stroke depression, also revealing that the HAMD score of the observation group was significantly lower than that of the control group, which confirms the scientificity, effectiveness and practicality of our experiment.

Psychological intervention refers to conducting targeted psychological interventions through formulating intervention plans based on the characteristics of patients using psychological methods and techniques adopted by medical staff. Psychological intervention is not only an effective measure to improve medical quality, promote rehabilitation and reduce complications but is also an effective means to establish a good doctor–patient relationship [18]. Psychological intervention during acupoint application refers to the process of step-by-step influencing the psychological activities, personality traits or psychological problems of patients under the guidance of psychological theory, leading to changes towards the expected goals [19]. The patient's body and mind should be relaxed to improve the therapeutic effect of this therapy.

Most studies have only adopted psychological intervention, without taking other measures, and have not used psychological intervention combined with drug therapy [20, 21, 22]. However, drug therapy, such as that using sertraline, has many side effects and is not tolerated by some elderly patients with stroke, meaning their treatment has to be stopped. As a result, the patients have poor medication compliance, and the drug efficacy is difficult to maintain. Although the final intervention effect is significant, there are adverse reactions that harm physical health and are prone to recurrence. We not only strengthened the therapeutic effect but also ensured its safety by adding an acupoint application. The final results also showed that the incidence of adverse reactions in the observation group was significantly lower than that in the control group.

Acupoint application combined with psychological intervention is a novel treatment method for liver-qi stagnation syndrome-induced depression. Acupoint application therapy combines the advantages of acupuncture and drug therapy. It not only has none of the disadvantages of internal medication, which can damage the spleen and stomach, but also integrates the characteristics of acupuncture to stimulate meridian qi movement, especially helpful for the elderly, young and weak. In addition, the medicines used are mostly common low-cost Chinese herbal medicines, thereby reducing the economic burden on patients and saving a large amount of medicinal materials. Acupoint application therapy directly stimulates acupoints through

medication and causes a significantly higher local drug concentration than with other areas through percutaneous absorption. The drugs penetrate into the meridians through the skin pores and move along them, thereby achieving the effects of regulating qi activity and regulating yin and yang.

During psychological intervention, fully communicating with patients and discussing matters with them can help them change their misconceptions about certain points, thereby reducing the impact on their moods and emotions. It can help patients re-establish their own behavioral perspectives and values, and view problems and surrounding behaviours correctly and rationally. The combination of acupoint application and psychological intervention not only fully reflects the characteristics of TCM in China but also has the high safety of external application and no systemic adverse reactions.

This study also has some limitations. First, the sample size is relatively small and the samples were selected from a single hospital, leading to relatively low result representativeness. Second, only one type of patient group was studied, meaning the results cannot be generalised to all patients with depression. Therefore, in future research, we will consider enlarging the sample size, selecting participants from multiple sources and expanding the sample type to explore whether this method can be applied to patients with other types of depression.

CONCLUSION

The combination of acupoint application and psychological intervention effectively alleviates the depressive state of patients with depression, with few side effects, low cost, high patient compliance and high efficacy. Moreover, it makes full use of TCM, leverages the advantages of unique TCM treatment without toxic side effects and has no adverse effects on the environment. When treating patients with depression, it can improve their emotional state.

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Table 1. Comparison of general data between the two groups of depressed patients

Group	n	Gender/n		Age/n			Course of disease / d		
		Male	Female	Minimum	Maximum	Average ($\bar{x}\pm s$)	Shor-test	Longest (d)	Average ($\bar{x}\pm s$)
Observa-tion group	35	16	19	61	82	67±7	14	68	47±6
Control group	35	14	21	58	80	69±5	17	63	49±5

Table 2. Comparison of efficacy in TCM syndrome between the two groups [*n* (%)]

Group	n	Cured	Remarkably effective	Effective	Invalid	Total effective rate %
Observation group	35	15 (42.9)	17 (48.6)	2 (5.7)	1 (2.8)	97.2%
Control group	35	11 (31.4)	14 (40)	7 (20)	3 (8.6)	91.4%

Comparison of total effective rate between the two groups, $p < 0.05$

Table 3. Comparison of HAMD-24 score between the two groups before and after treatment ($\bar{x} \pm s$)

Group	n	Before tre-atment	After 1 course of treatment	After 2 courses of treatment	After 4 courses of treatment
Observation group	35	34.03 ± 8.43	27.33 ± 8.05	19.03 ± 7.88	8.73 ± 6.21
Control group	35	33.17 ± 7.06	28.76 ± 8.55	24.63 ± 8.35	16.23 ± 6.26

Compared with the same group before treatment, $p < 0.05$;

compared with the control group at the same time point, $p < 0.05$

Table 4. Comparison of adverse reactions between the two groups [n (%)]

Group	n	Sleep disorders	Dry mouth	Weakness	Dizziness	Others	Overall incidence %
Observation group	35	0 (0)	0 (0)	0 (0)	1 (2.9)	0 (0)	1 (2.9)
Control group	35	18 (51.4)	6 (17.1)	4 (11.4)	2 (5.7)	2 (5.7)	32 (91.4)

