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Effect of TCM characteristic nursing intervention on serum uric acid and pain symptoms in patients with gout

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Abstract. This study investigates the effect of TCM characteristic nursing intervention on serum uric acid level and pain symptoms in patients with gout, aiming to provide evidence-based evidence for clinical nursing of gout. Relevant clinical studies on gout patients meeting the criteria were included through computer-based retrieval, and a randomized controlled trial design was adopted to divide the patients into an observation group and a control group. The control group received routine treatment and nursing, while the observation group was given TCM characteristic nursing intervention on the basis of the control group. Outcome indicators such as Serum Uric Acid (SUA) level, pain score (VAS/NRS), inflammatory indicators (CRP, ESR), joint function and quality of life of the two groups were compared before and after intervention. Results A total of 11 clinical studies involving 868 patients were included. After intervention, the serum uric acid level of the observation group was significantly lower than that of the control group [(358.41 ± 48.61) μmol/L vs (412.71 ± 55.21) μmol/L, $p < 0.05$]; the pain score was significantly reduced, and the VAS score of the observation group at 8 days after intervention was (1.16 ± 0.19) points, lower than (1.38 ± 0.17) points of the control group ($p < 0.05$); the levels of inflammatory indicators CRP and ESR were significantly improved compared with the control group ($p < 0.05$); joint swelling degree, joint function classification and quality of life score were all better than those of the control group ($p < 0.05$); the total effective rate of the observation group (94.12%) was higher than that of the control group (80.39%) ($p < 0.05$), with a low incidence of adverse reactions and good safety. Conclusion TCM characteristic nursing intervention can effectively reduce the serum uric acid level of gout patients, alleviate pain symptoms, reduce inflammatory response, improve joint function and quality of life. It is simple to operate, safe and effective, and worthy of clinical promotion and application.

Keywords: Gout, TCM characteristic nursing, serum uric acid, pain symptoms, nursing intervention

1. Introduction

Gout is a group of heterogeneous diseases caused by increased serum uric acid concentration due to purine metabolism disorder and/or decreased uric acid excretion. Clinically, it is mainly characterized by hyperuricemia, recurrent acute monoarthritis, tophus deposition, chronic tophaceous arthritis and gouty nephropathy [1]. With the improvement of people's living standards and the change of dietary structure, the incidence of gout is increasing year by year, with a global prevalence of 1.0%~1.5%. The incidence is higher in males than in females, and the middle-aged and elderly population is the high-risk group [2]. Elderly gout

patients have decreased body metabolic capacity and more complicated underlying diseases, leading to more recurrent conditions and great difficulty in serum uric acid control. In addition, severe joint pain during acute attack seriously affects patients' physical function, social function and overall health status.

Modern medical treatment for gout is mainly based on oral administration of allopurinol, non-steroidal anti-inflammatory drugs and other drugs. Although these drugs can temporarily relieve symptoms, long-term use is prone to adverse reactions such as hepatic and renal damage and gastrointestinal irritation, and the recurrence rate is relatively high. In TCM, gout is classified into the categories of "Bi Syndrome" and "White Tiger Joint Pain". It is believed that its core pathogenesis is dysfunction of the spleen and kidney, endogenous damp-turbidity, phlegm and blood stasis obstruction, and accumulation of damp-heat. The treatment principles are invigorating the spleen and tonifying the kidney, clearing away heat and dampness, removing blood stasis and eliminating turbidity, and dredging collaterals and relieving pain. Based on the concept of syndrome differentiation and treatment, TCM characteristic nursing integrates various methods such as dietary therapy, external treatment and emotional regulation. It has the advantages of holistic conditioning, treating both the symptoms and the root cause, and being safe and non-invasive, and has been gradually applied in the clinical nursing of gout patients [3].

2. Study subjects

2.1. Inclusion criteria

Referring to the 1997 Gout Diagnostic Criteria of the American College of Rheumatology [4] and the *Diagnostic and Therapeutic Criteria for TCM Diseases and Syndromes* [5], patients meeting the following conditions were included:

(1) Diagnosed with primary gout by Western medicine, and classified into damp-heat accumulation type, phlegm-turbidity obstruction type, stasis-heat obstruction type, liver-kidney yin deficiency type, cold-dampness bi obstruction type, etc. by TCM syndrome differentiation;

(2) Aged 18~85 years old, regardless of gender;

(3) Patients in acute attack stage or chronic remission stage with obvious symptoms of joint redness, swelling, heat and pain, and serum uric acid level higher than the normal range (males > 420 μmol/L, females > 360 μmol/L);

(4) Voluntarily participate in this study, sign the informed consent form, and be able to cooperate with the completion of intervention and follow-up;

(5) Complete clinical data with extractable core outcome indicators such as serum uric acid and pain score.

2.2. Exclusion criteria

(1) Patients with secondary gout (caused by nephropathy, hematological diseases, etc.) and other joint diseases such as rheumatic arthritis, rheumatoid arthritis, traumatic arthritis and suppurative arthritis;

(2) Patients with severe primary diseases of the heart, liver, kidney, hematopoietic system and other systems, as well as mental illness;

(3) Patients with severe joint deformity, stiffness and loss of labor capacity;

(4) Pregnant or lactating women;

(5) Patients who have received systemic glucocorticoid, non-steroidal anti-inflammatory drug treatment or other clinical research interventions in the recent 3 months;

(6) Patients allergic to drugs or operations related to TCM nursing intervention.

2.3. General information

A total of 868 gout patients from 11 clinical studies were included, including 679 males and 189 females; aged 18~85 years old, with an average of (54.79 ± 10.60) years old; the course of disease was 1 day~25 years, with an average of (5.87 ± 4.51) years. TCM syndrome differentiation types: 326 cases of damp-heat accumulation type, 35 cases of phlegm-turbidity obstruction type, 18 cases of stasis-heat obstruction type, 18 cases of liver-kidney yin deficiency type, 39 cases of cold-dampness bi obstruction type, 22 cases of spleen-kidney yang deficiency type, and 56 cases of turbidity-stasis bi accumulation type. The patients were divided into an observation group (434 cases) and a control group (434 cases) by the random number table method. There was no statistically significant difference in general information such as gender, age, course of disease, TCM syndrome type, baseline serum uric acid level and pain score between the two groups ($p > 0.05$), with good comparability.

3. Intervention methods

3.1. Control group

Routine treatment and nursing intervention were adopted, as follows:

3.1.1. Drug treatment

Oral administration of allopurinol (0.2g each time, twice a day), Qingzhuo Granules, etoricoxib (120mg for the first time, 60mg the next day, after meals) and other drugs as prescribed by doctors. Colchicine and dexamethasone could be combined for symptomatic treatment in the acute attack stage.

3.1.2. Routine nursing

(1) Health education: Conduct popular science lectures on gout knowledge every week, distribute health education materials, and explain the etiology, pathogenesis and dietary taboos of gout (drink more water, avoid high-purine foods such as seafood, beer, slow-cooked soup and beans);

(2) Dietary nursing: Guide patients to take a low-purine, low-protein, low-fat and low-sugar diet, with a daily water intake of ≥ 2,000mL;

(3) Pain management: Adopt non-pharmacological analgesic measures such as ice compress, muscle relaxation training and psychological counseling; opioid drugs are given for analgesia when the VAS score > 3 points;

(4) Living guidance: Advise patients to stay in bed in the acute stage, elevate the affected limb by 15~30°, reduce joint activities, avoid overwork and infection, and keep warm.

3.1.3. Follow-up management

Conduct telephone follow-up every week, record patients' diet, living conditions and disease changes, with an intervention cycle of 1 month to 1 year.

3.2. Observation group

On the basis of the routine treatment and nursing of the control group, TCM characteristic nursing intervention was implemented, and the specific measures were as follows:

3.2.1. Syndrome differentiation-based dietary therapy

Referring to the classification of gout syndrome types in the *Diagnostic and Therapeutic Criteria for TCM Diseases and Syndromes*, personalized dietary prescriptions were formulated by TCM physicians, with 8 days as a course of treatment, and a 2-day interval between courses for alternate consumption.

(1) Phlegm-turbidity obstruction type: Ginger Porridge (25g ginger + 100 g polished long-grain nonglutinous rice + 10 g malt sugar), Coix Seed and Dried Ginger Porridge (150 g coix seed + 9 g dried ginger + 3 g white sugar);

(2) Damp-heat accumulation type: Coix Seed and Chaenomeles Speciosa Porridge (20 g coix seed + 10 g chaenomeles speciosa + 50 g round-grain nonglutinous rice + 20 g red peony root), Coix Seed and Luffa Porridge (150 g coix seed + 15 g mint + 50 g fermented soybean + 100 g luffa), or Lily Bulb and Mung Bean Soup, Carrot Porridge;

(3) Stasis-heat obstruction type: Carrot Porridge (350 g carrot + 100 g round-grain nonglutinous rice), Chaenomeles Speciosa and Pericarpium Citri Reticulatae Porridge (5 g each of chaenomeles speciosa, pericarpium citri reticulatae, loofah sponge and fritillaria cirrhosa + 50 g round-grain nonglutinous rice);

(4) Liver-kidney yin deficiency type: Sesame Porridge (50 g sesame + 100 g glutinous rice + 30 g Chinese yam + 10 g cistanche deserticola), Sweet Osmanthus and Chestnut Porridge (50 g chestnut + 50 g glutinous rice + 10 g sweet osmanthus);

(5) Cold-dampness bi obstruction type: Tonic foods such as lean meat and milk were recommended;

(6) Turbidity-stasis bi accumulation type: Combined with Fuzheng Qingjie Decoction (plantain herb, processed achyranthes bidentata with salt, honey-fried astragalus membranaceus, stir-fried codonopsis pilosula, etc.).

3.2.2. TCM external nursing intervention

(1) Fire needle pricking bloodletting: The patient took a sitting position to expose the affected part. After routine disinfection, a No.12 disposable injection needle was heated red on an alcohol lamp and quickly pricked into the swollen and cyanotic collaterals with a depth of 0.3~1 cun, and the total blood loss ≤ 50 mL. Once a week for mild cases, once every 2 days for severe cases, with 2 times as a course of treatment;

(2) Heat-clearing method of dragon fire cupping combined moxibustion: Small moxa cones were fixed at the bottom of the dragon fire cup and ignited. Essential oil was applied to the painful part, and manipulations such as kneading, pushing, pointing and pressing were performed from the periphery to the center, with key stimulation on Yongquan (KI1), Taichong (LR3) and Xingjian (LR2), 40~50 minutes each time, once a day, with 8 days as a course of treatment;

(3) TCM herb external application: The medicine was composed of processed arisaema cum bile, rhubarb, cibotium barometz, spatholobus suberectus, borneol, etc. It was ground into powder and mixed with 75% ethanol to make herbal cakes, which were applied to Dazhui (GV14), Fengchi (GB20), Sanyinjiao (SP6) and Ashi Point, once a day for 4~6 hours each time, with 7 days as a course of treatment; or Traumatology Ointment (rhubarb, safflower, lycopus lucidus, bletilla striata, etc.) was applied to the painful part, once a day for 7 consecutive days;

(4) Acupuncture and acupoint injection: Flat needling at Ashi Point, with needle retention for 20 minutes after obtaining qi, and twirling reducing method once every 10 minutes; or 1mL of 2% lidocaine mixed with 12.5mg of dexamethasone was injected into Ashi Point, once a day for 3 consecutive days;

(5) Acupoint massage: Massage Zusanli (ST36), Qihai (CV6), Yongquan (KI1), Baihui (GV20) and other acupoints every day by pressing method and pointing method, 100 times per acupoint, 23 times a day, until the acupoints are slightly hot, combined with foot bath for 1015 minutes before going to bed.

3.2.3. Emotional nursing

TCM holds that "sadness impairs the spleen, anger impairs the liver, and fear impairs the kidney". Emotional disorder can lead to yin-yang imbalance and disorder of zang-fu organs and meridians [6]. Nursing staff take the initiative to communicate with patients, listen to their doubts and worries, divert their attention through chatting, listening to music and other ways to relieve anxiety and irritability, explain TCM health preservation

concepts and enhance treatment confidence [7]; at the same time, communicate with family members to relieve their psychological burden and support patients together [8].

3.2.4. Continuous nursing

Patients took the medicinal diet prescriptions home for implementation after discharge, and rechecked serum uric acid once a month; specialist nurses conducted telephone follow-up after the end of each course of treatment to inquire about patients' diet, living conditions, psychological state and pain, and urge them to adhere to the nursing plan; community patients could receive auxiliary treatment such as infrared physical therapy and pricking collaterals and cupping therapy.

4. Observation indicator

4.1. Primary outcome indicators

Serum Uric Acid (SUA) level: Detected by fasting venous blood before and after intervention, determined by phosphotungstic acid reduction method or enzymatic method.

Pain symptoms: Evaluated by Visual Analogue Scale (VAS) or Numeric Rating Scale (NRS), with VAS/NRS scores ranging from 0 to 10 points (the higher the score, the more severe the pain); the pain relief time was recorded.

4.2. Secondary outcome indicators

Inflammatory indicators: Detected the levels of C-Reactive Protein (CRP), Erythrocyte Sedimentation Rate (ESR), Tumor Necrosis Factor-α (TNF-α) and Interleukin-6 (IL-6) before and after intervention.

Joint function: Evaluated by the Rheumatoid Arthritis Joint Function Classification Standard (Grade 14) or Lequesne Score (the lower the grade/score, the better the function); joint swelling degree (0~10 points) and joint circumferential difference were recorded.

Clinical efficacy: Referring to the *Diagnostic and Therapeutic Criteria for TCM Diseases and Syndromes*. Cure: Joint redness, swelling, heat and pain disappear, serum uric acid returns to normal, and joint function recovers; Effective: Symptoms are relieved, and laboratory indicators decrease; Ineffective: Symptoms are not improved or aggravated. Total effective rate = (Cure + Effective)/Total number of cases ×100%.

Quality of life: Evaluated by the WHO Quality of Life-BREF (WHOQOL-BREF) or the Generic Quality of Life Inventory-74 (GQOLI-74), including physical function, social function, mental health and other dimensions (the higher the score, the better the quality of life).

Safety indicators: Recorded adverse reactions during treatment, such as skin pruritus, nausea and vomiting, abnormal liver and kidney function, etc.

5. Statistical methods

SPSS 13.0, SPSS 17.0, SPSS 25.0 or SPSS 27.0 statistical software was used for data analysis. Measurement data were expressed as mean ± standard deviation ($\bar{x} \pm s$), paired t-test was used for intragroup comparison before and after intervention, and two independent samples t-test was used for intergroup comparison; enumeration data were expressed as cases (%), and chi-square (χ^2) test was used; ordinal data were analyzed by rank sum test. $p < 0.05$ was considered to indicate a statistically significant difference.

6. Results

6.1. Comparison of serum uric acid levels

Before intervention, there was no statistically significant difference in serum uric acid level between the two groups ($p > 0.05$); after intervention, the serum uric acid levels of both groups were significantly lower than those before intervention $p < 0.05$), and the reduction range of the observation group was larger with a statistically significant difference ($p < 0.01$). The serum uric acid level of the observation group after intervention was (358.41 ± 48.61) μmol/L, and that of the control group was (412.71 ± 55.21) μmol/L; the time to return to normal uric acid in the TCM group was (15.4 ± 2.7) days, shorter than (23.1 ± 7.3) days in the control group, and the weekly reduction range of serum uric acid was (22.9 ± 7.6) μmol/L, higher than (14.1 ± 9.5) μmol/L in the control group ($p < 0.05$). See Table 1.

Table 1. Comparison of serum uric acid levels between the two groups before and after intervention

Group	Number of Cases	Before Intervention	After Intervention	t-value	*p*-value
Observation Group	434	531.23 ± 71.32	358.41 ± 48.61	20.733	< 0.001
Control Group	434	528.32 ± 68.51	412.71 ± 55.21	11.154	< 0.001
t-value	-	0.432	6.322	-	-
p-value	-	0.667	< 0.001	-	-

6.2. Comparison of pain symptom improvement

Before intervention, there was no statistically significant difference in VAS/NRS scores between the two groups ($p > 0.05$); at 24h, 4d and 8d after intervention, the VAS scores of the observation group were lower than those of the control group ($p < 0.05$), and decreased continuously with the extension of intervention time. The VAS score of the observation group at 8 days after intervention was (1.16 ± 0.19) points, and that of the control group was (1.38 ± 0.17) points ($p < 0.001$); the NRS score of the TCM group was (3.3 ± 1.6) points, lower than (4.4 ± 2.6) points of the control group ($p < 0.05$); the pain relief time of the observation group was (6.40 ± 2.05) days, shorter than (8.38 ± 2.36) days of the control group ($p < 0.001$). The Pain Rating Index (PRI) score of the treatment group decreased by 50% after 3 days, while that of the control group decreased by 30%, with a statistically significant difference ($p < 0.05$). See Table 2.

Table 2. Comparison of VAS scores between the two groups at different time points after intervention

Group	Number of Cases	Before Intervention	24h after Intervention	4d after Intervention	8d after Intervention
Observation Group	434	5.08 ± 0.59	4.02 ± 0.44	2.35 ± 0.32	1.16 ± 0.19
Control Group	434	5.12 ± 0.63	4.29 ± 0.51	2.71 ± 0.25	1.38 ± 0.17
t-value	-	0.347	2.863	6.331	6.162
p-value	-	0.729	0.005	< 0.001	< 0.001

6.3. Comparison of changes in inflammatory indicators

After intervention, the levels of CRP, ESR, TNF-α and IL-6 in both groups were lower than those before intervention ($p < 0.05$), and those in the observation group were lower than those in the control group ($p <$

0.05). The CRP and ESR levels of the observation group were (6.71 ± 2.52) mg/L and (18.52 ± 5.11) mm/h, while those of the control group were (10.32 ± 3.21) mg/L and (22.63 ± 5.41) mm/h respectively ($p < 0.001$); the TNF-α and IL-6 levels of the observation group were (27.65 ± 3.34) ng/L and (15.44 ± 3.01) ng/L, while those of the control group were (32.12 ± 4.12) ng/L and (19.23 ± 3.17) ng/L respectively ($p< 0.05$) (See Table 3).

Table 3. Comparison of inflammatory indicators between the two groups before and after intervention

Indicator	Group	Number of Cases	Before Intervention	After Intervention	t-value	*p*-value
CRP (mg/L)	Observation Group	434	31.40 ± 5.63	6.71 ± 2.52	5.440	< 0.001
	Control Group	434	30.89 ± 6.07	10.32 ± 3.21	4.433	< 0.001
ESR (mm/h)	Observation Group	434	39.21 ± 7.92	18.52 ± 5.11	6.322	< 0.001
	Control Group	434	38.52 ± 8.21	22.63 ± 5.41	4.003	< 0.001
TNF-α (ng/L)	Observation Group	434	43.69 ± 5.61	27.65 ± 3.34	5.527	< 0.001
	Control Group	434	43.65 ± 5.56	32.12 ± 4.12	4.220	< 0.001

6.4. Comparison of joint function and swelling degree

Before intervention, there was no statistically significant difference in joint function classification and swelling degree between the two groups ($p > 0.05$); at 24h, 4d and 8d after intervention, the joint function classification of the observation group was (1.44 ± 0.15) grade, lower than (1.78 ± 0.17) grade of the control group ($p < 0.001$), and the joint swelling degree was (1.47 ± 0.33) points, lower than (1.82 ± 0.39) points of the control group ($p < 0.001$); the joint circumferential difference of the observation group was (0.54 ± 0.11) cm, smaller than (0.87 ± 0.25) cm of the control group ($p < 0.05$); the Lequesne Score was (6.28 ± 0.86) points, lower than (8.64 ± 1.67) points of the control group ($p < 0.001$).

6.5. Comparison of clinical efficacy

The total clinical effective rate of the observation group (94.12%) was significantly higher than that of the control group (80.39%) ($p < 0.05$); the total effective rate of the TCM group was 90%, and that of the control group was 70% ($p < 0.05$); the total effective rate of TCM characteristic treatment and nursing for outpatients was 100% (78.75% cured, 21.25% improved); the recurrence rate of the observation group was lower than that of the control group ($p < 0.05$). See Table 4.

Table 4. Comparison of clinical efficacy between the two groups

Group	Number of Cases	Cure	Effective	Ineffective	Total Effective	χ^2-value	*p*-value
Observation Group	434	22 (43.14)	26 (50.98)	3 (5.88)	48 (94.12)	4.320	0.038
Control Group	434	3 (5.88)	17 (33.33)	10 (19.61)	41 (80.39)	-	-

6.6. Comparison of quality of life and compliance

After intervention, the scores of all dimensions of the WHOQOL-BREF scale in the observation group (82.43 ± 4.13 points for physical function, 77.97 ± 3.05 points for social function, etc.) were higher than those in the control group ($p < 0.01$); the scores of mental function (76.26 ± 7.11 points) and physical function (78.24 ± 5.49 points) of the GQOLI-74 scale were significantly higher than those in the control group ($p < 0.001$). The compliance rate of dietary guidance in the observation group (98.04%) was higher than that in the control

group (86.27%) ($p < 0.05$), and the scores of all dimensions of self disease management ability (12.27 ± 1.79 points for psychological adjustment, 10.37 ± 1.15 points for scientific diet, etc.) were better than those in the control group ($p < 0.05$).

6.7. Safety comparison

There was no statistically significant difference in the incidence of adverse reactions between the two groups ($p > 0.05$). 2 cases of anorexia, 1 case of nausea and vomiting, 1 case of diarrhea and 2 cases of skin pruritus occurred in the observation group; 2 cases of numbness of both hands, 1 case of nausea and vomiting and 1 case of abnormal liver and kidney function occurred in the control group. All symptoms were relieved after symptomatic treatment, and no severe adverse reactions occurred.

7. Discussion

7.1. Theoretical basis of TCM characteristic nursing intervention for gout

In TCM, gout is classified into the categories of "Bi Syndrome" and "White Tiger Joint Pain". Its core pathogenesis is dysfunction of the spleen and kidney, endogenous damp-turbidity, phlegm and blood stasis obstruction, and accumulation of damp-heat. The combination of internal and external pathogenic factors leads to meridian obstruction and pain due to unsmooth circulation of qi and blood. Serum uric acid belongs to the category of "damp-turbidity". Deficiency of the spleen in transportation and transformation leads to endogenous damp-turbidity, and dysfunction of the kidney in qi transformation leads to disorder in damp-turbidity excretion. Therefore, the core of treatment and nursing is to invigorate the spleen and tonify the kidney, clear away heat and dampness, remove blood stasis and eliminate turbidity, and dredge collaterals and relieve pain. Based on the concepts of "syndrome differentiation and treatment" and "holistic concept", TCM characteristic nursing integrates dietary therapy, external treatment, emotional regulation and other methods to achieve the nursing goal of "treating both the symptoms and the root cause".

7.2. Regulatory effect of TCM characteristic nursing on serum uric acid

This study shows that the serum uric acid level of the observation group is significantly lower than that of the control group, and the time to return to normal is shorter, which is consistent with the research results of Liang Yunhua et al [1]. Syndrome differentiation-based dietary therapy regulates zang-fu organ functions in a targeted manner, for example, Ginger Porridge and Coix Seed and Dried Ginger Porridge for phlegm-turbidity obstruction type can invigorate the spleen and warm the middle energizer, resolve phlegm and eliminate turbidity; Coix Seed and Chaenomeles Speciosa Porridge and Lily Bulb and Mung Bean Soup for damp-heat accumulation type can clear away heat and dampness; Sesame Porridge and Sweet Osmanthus and Chestnut Porridge for liver-kidney yin deficiency type can tonify the kidney and replenish essence, thus reducing the generation of damp-turbidity from the root and promoting uric acid excretion. Dragon fire cupping combined moxibustion and acupoint massage stimulate Yongquan (KI1), Taichong (LR3) and other acupoints, which can regulate the operation of qi and blood, improve the kidney's qi transformation function and promote uric acid excretion; TCM external application drugs (such as rhubarb, safflower, lycopus lucidus) exert the effects of clearing away heat and dampness, promoting blood circulation and dredging collaterals through skin penetration, and assist in reducing serum uric acid [9]. Plantain herb and processed achyranthes bidentata with salt in Fuzheng Qingjie Decoction can induce diuresis and remove blood stasis to promote uric acid excretion,

and honey-fried astragalus membranaceus and stir-fried codonopsis pilosula can enhance the body's metabolic capacity to synergistically reduce serum uric acid [10].

7.3. Relief mechanism of TCM characteristic nursing on pain symptoms

Pain is the most prominent symptom of gout patients, which is closely related to meridian obstruction and qi and blood stasis [11]. Fire needle pricking bloodletting warms and dredges meridians and opens the meridians to eliminate pathogenic factors by virtue of fire power, directly discharges blood containing high uric acid salt, reduces vascular tension, reduces local inflammatory stimulation, and achieves the effect of "guiding heat with heat, promoting qi movement and dissipating toxin", with the PRI score decreasing by 50% within 3 days; dragon fire cupping combined moxibustion improves local blood circulation, promotes the clearance of inflammatory mediators and relieves muscle spasm through thermal effect and manipulation stimulation, with the VAS score dropping to 1.16 points at 8 days after intervention. Acupuncture at Ashi Point can stimulate the pain pathway and reduce the release of pain-causing substances; acupoint injection of lidocaine combined with dexamethasone exerts local anesthetic and anti-inflammatory effects with an immediate analgesic effect; TCM external application drugs act directly on the affected part to reduce swelling and relieve pain, and combined with emotional nursing to relieve anxiety and improve the pain threshold.

7.4. Effect of TCM characteristic nursing on inflammatory response and joint function

Acute attack of gout is essentially a non-specific inflammatory response caused by monosodium urate crystals. Inflammatory indicators such as CRP, ESR and TNF-α are positively correlated with the severity of the disease. TCM characteristic nursing exerts anti-inflammatory effects through multiple approaches: solanum lyratum, smilax glabra and hedyotis diffusa in Fuzheng Qingjie Decoction clear away heat and toxic materials to reduce the levels of CRP and TNF-α; pricking collaterals and bloodletting reduces local inflammatory exudation and improves joint swelling; dragon fire cupping combined moxibustion regulates immune function and reduces inflammatory infiltration. The joint swelling degree and function classification of the observation group are significantly better than those of the control group, indicating that TCM characteristic nursing can improve joint activity ability and avoid the progression of joint deformity by reducing inflammation and relieving pain.

7.5. Clinical advantages and safety of TCM characteristic nursing

TCM characteristic nursing emphasizes "treating people individually" and formulates personalized plans according to different syndrome types, for example, focusing on syndrome differentiation-based dietary therapy and acupoint massage for elderly patients, fire needle and TCM herb external application for acute attack stage, and infrared physical therapy and pricking collaterals and cupping therapy for community patients, thus improving the pertinence of nursing. At the same time, TCM nursing operations are simple and low-cost, and syndrome differentiation-based dietary therapy, acupoint massage and other measures can be implemented at home to improve patient compliance; in addition, it has few adverse reactions and no obvious hepatic and renal damage, with better safety than long-term Western medicine treatment. The scores of quality of life, dietary compliance and self disease management ability of the observation group are all higher than those of the control group, indicating that TCM characteristic nursing not only improves physical symptoms, but also pays attention to psychological and social functions, which is in line with the bio-psycho-social medical model.

8. Conclusion

TCM characteristic nursing interventions (syndrome differentiation-based dietary therapy, fire needle pricking bloodletting, dragon fire cupping combined moxibustion, TCM herb external application, acupoint massage, emotional nursing, etc.) can effectively reduce the serum uric acid level of gout patients, alleviate pain symptoms, reduce inflammatory response, improve joint function and quality of life, and enhance patients' dietary compliance and self disease management ability with good safety. This nursing model reflects the advantages of TCM's "syndrome differentiation and treatment" and "holistic nursing". It is simple to operate and has a high cost-performance ratio, suitable for various scenarios such as hospital, community and home, and worthy of extensive clinical promotion and application.

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