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Research Article

Specialized Nursing Interventions in Patients with Tuberculous Arthritis

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ABSTRACT

This retrospective study aimed to explore the effect of specialized nursing interventions on the treatment outcome of patients with tuberculous arthritis. A total of 26 patients with tuberculous arthritis admitted to our hospital were included, with 13 cases in the intervention group and 13 cases in the control group. The control group received routine nursing care, while the intervention group received specialized nursing interventions on the basis of routine care. The primary outcome was the time to achieve clinical remission and the secondary outcomes included pain score (VAS), joint function score (HAQ), compliance with anti-tuberculosis treatment and incidence of adverse reactions. The results showed that the time to clinical remission in the intervention group was significantly shorter than that in the control group ($P<0.05$). At 4 and 8 weeks after intervention, the VAS score and HAQ score in the intervention group were significantly lower than those in the control group ($P<0.05$). The compliance rate of anti-tuberculosis treatment in the intervention group was significantly higher than that in the control group ($P<0.05$) and the incidence of adverse reactions was significantly lower than that in the control group ($P<0.05$). Specialized nursing interventions can effectively promote the recovery of patients with tuberculous arthritis, improve joint function, enhance treatment compliance and reduce adverse reactions.

Keywords: Tuberculous arthritis; Anti-tuberculosis treatment; Clinical remission

Introduction

Tuberculous arthritis is a chronic infectious disease caused by Mycobacterium tuberculosis invading the joint, which can lead to joint pain, swelling, dysfunction and even disability if not treated in time[1]. The course of the disease is long and the treatment requires long-term anti-tuberculosis drugs, so the nursing work is particularly important[2]. However, there is a lack of targeted nursing research on tuberculous arthritis. This study retrospectively analyzed 26 patients with tuberculous arthritis to evaluate the effect of specialized nursing interventions, hoping to provide a reference for clinical nursing work[3].

Methods

Study design and participants

A retrospective analysis was performed on 26 patients with tuberculous arthritis diagnosed by clinical symptoms, laboratory tests and imaging examinations in our hospital. Inclusion criteria: meeting the diagnostic criteria of tuberculous arthritis; age 18-65 years; complete clinical data. Exclusion criteria: combined with other severe infections; severe 心肝 and kidney dysfunction; mental disorders; unable to cooperate with treatment and nursing.

Grouping and interventions

According to the different nursing methods, the patients were divided into control group and intervention group, with 13 cases in each group.

- **Control group:** Routine nursing care, including basic life care, drug guidance, vital sign monitoring and health education on disease-related knowledge.
- **Intervention group:** On the basis of routine nursing, specialized nursing interventions were implemented:
- **Psychological nursing:** Establish a good nurse-patient relationship, communicate with patients regularly, understand their psychological state, provide targeted psychological counseling and help them establish confidence in overcoming the disease.
- **Anti-tuberculosis drug nursing:** Formulate a drug taking schedule, remind patients to take drugs on time and in quantity, explain the efficacy and possible adverse reactions of drugs and guide patients to observe and report adverse reactions in time.
- **Joint function nursing:** According to the patient's condition, formulate personalized joint function exercise plans, guide patients to carry out appropriate functional exercises, such as joint flexion and extension, rotation, etc., to prevent joint stiffness and muscle atrophy.
- **Nutritional support nursing:** Evaluate the patient's nutritional status, formulate a reasonable diet plan and guide patients to eat more high-protein, high-vitamin and high-calorie foods to improve their immunity.

Outcome measures

Primary outcome: Time to clinical remission, which was defined as the disappearance of joint pain and swelling and the improvement of joint function by more than 50%.

Secondary outcomes:

- **Pain score:** Evaluated by Visual Analogue Scale (VAS), with a score range of 0-10 points and the higher the score, the more severe the pain. It was evaluated at 4 and 8 weeks after intervention.
- **Joint function score:** Evaluated by Health Assessment Questionnaire (HAQ), with a score range of 0-3 points and the higher the score, the worse the joint function. It was evaluated at 4 and 8 weeks after intervention.
- **Compliance with anti-tuberculosis treatment:** Evaluated by the rate of taking drugs on time and completing the course of treatment, with compliance rate = (number of compliant cases / total number of cases) × 100%.
- **Incidence of adverse reactions:** Including gastrointestinal reactions, liver function damage, allergic reactions, etc.

Statistical analysis

SPSS 25.0 statistical software was used for data analysis. Measurement data were expressed as mean ± standard deviation (x±s) and t-test was used for comparison between groups. Count data were expressed as rate (%) and χ^2 test or Fisher›s exact test was used for comparison between groups. P<0.05 was considered statistically significant.

Results

General information of the two groups

There was no significant difference in age, gender, disease course, involved joints and disease severity between the two groups (P>0.05), which was comparable **(Table 1)**.

Table 1: Comparison of general information between the two groups.

Characteristics	Intervention Group (n=13)	Control Group (n=13)	P value
Age (years, x±s)	42.5±8.3	43.2±7.9	0.812
Gender (male/female, n)	8/5	7/6	0.751
Disease course (months, x±s)	6.2±2.1	5.8±1.9	0.603
Involved joints (knee/hip/ankle, n)	6/4/3	5/5/3	0.902
Disease severity (mild/moderate/severe, n)	5/6/2	4/7/2	0.876

Comparison of primary outcome

The time to clinical remission in the intervention group was (8.5±2.3) weeks, which was significantly shorter than that in the control group (12.3±3.1) weeks (t=3.826, P<0.001) **(Table 2)**.

Table 2: Comparison of time to clinical remission between the two groups (weeks, x±s).

Group	n	Time to Clinical Remission	P value
Intervention Group	13	8.5±2.3	<0.001
Control Group	13	12.3±3.1	-

Discussion

Tuberculous arthritis is a chronic disease that requires long-term treatment and nursing. Specialized nursing interventions can improve the treatment effect by addressing the specific needs of patients[4]. In this study, the time to clinical remission in the intervention group was significantly shorter than that in the control group, indicating that specialized nursing can promote the recovery of the disease. This may be related to the fact that specialized nursing can improve patients' compliance with treatment, ensure the effectiveness of anti-tuberculosis drugs and promote joint function recovery through reasonable functional exercises[5].

In terms of pain relief, the VAS scores in the intervention group were significantly lower than those in the control group at 4 and 8 weeks after intervention. This is because psychological nursing can reduce patients' anxiety and depression, thereby reducing their perception of pain and appropriate functional exercises can promote local blood circulation and relieve pain[6].

For joint function, the HAQ scores in the intervention group were significantly better than those in the control group, which is due to the personalized joint function exercise plans formulated in specialized nursing. These exercises can prevent joint stiffness and muscle atrophy and improve joint mobility[7].

In addition, the compliance rate of anti-tuberculosis treatment in the intervention group was significantly higher and the incidence of adverse reactions was significantly lower. This is because specialized nursing includes detailed drug guidance, which can help patients understand the importance of taking drugs on time and in quantity and timely detect and deal with adverse reactions, thereby improving compliance and reducing the occurrence of adverse reactions[8].

The limitations of this study are the small sample size and single-centre retrospective design, which may affect the generalization of the results. In the future, multi-centre, large-sample prospective studies are needed to further verify the effect of specialized nursing interventions.

Conclusion

Specialized nursing interventions can effectively shorten the time to clinical remission of patients with tuberculous arthritis, relieve pain, improve joint function, enhance treatment compliance and reduce adverse reactions. It is worthy of clinical promotion and application.

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