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Research Article

Impact of Comprehensive Nursing Interventions on Patients with Septic Arthritis

Chaoqun Zhang*

Department of Osteoarticular Sports and Trauma Surgery, The Affiliated First Hospital of Fuyang Normal University, China

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***Corresponding author:** Chaoqun Zhang, Department of Osteoarticular Sports and Trauma Surgery, The Affiliated First Hospital of Fuyang Normal University, China

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ABSTRACT

This retrospective study assessed the efficacy of comprehensive nursing interventions in 24 patients with septic arthritis. Patients were divided into intervention group (n=12) and control group (n=12). The control group received routine nursing, while the intervention group received additional comprehensive nursing including infection control, pain management, functional exercise guidance and psychological support. Primary outcome was time to clinical cure; secondary outcomes included C-reactive protein (CRP) levels, pain score (VAS), joint range of motion (ROM) and complication rates. Results showed significantly shorter cure time in the intervention group (14.2 ± 3.5 days vs 21.6 ± 4.8 days, $p < 0.01$). At 7 and 14 days, the intervention group had lower CRP, lower VAS scores and better ROM ($p < 0.05$ for all). Complication rate was 8.3% in intervention group vs 33.3% in controls ($p < 0.05$). Comprehensive nursing accelerates recovery in septic arthritis patients with superior clinical outcomes.

Keywords: C-reactive protein; Range of motion; Lower VAS scores

Introduction

Septic arthritis is an acute infectious joint disease with incidence of 2-10 cases per 100,000 annually, requiring prompt intervention to prevent joint destruction¹. Nursing care plays a critical role in infection control and functional recovery, yet standardized nursing protocols remain underdeveloped². This study evaluates targeted nursing interventions in a small cohort, addressing the gap in specialized septic arthritis nursing research³.

Methods

Study design and participants

Retrospective analysis of 24 patients (18-70 years) with culture-proven septic arthritis (knee/hip/ankle) confirmed

by synovial fluid analysis. Exclusion criteria: osteomyelitis, immunosuppression and polymicrobial infections.

Interventions

Control group: Routine care (antibiotic administration, wound dressing, vital sign monitoring).

Intervention group: Added interventions:

Strict aseptic technique during joint aspirations/dressings
Protocolized pain management (oral analgesics + cold therapy)
Early mobilization plan (isometric exercises from day 3)
Patient education on infection signs and compliance monitoring
Time to clinical cure (resolution of symptoms + normal CRP)
Secondary: CRP levels (days 3/7/14), VAS (0-10), joint ROM (degrees), complications (osteoarthritis, joint instability).

Statistics

SPSS 26.0 used with independent t-tests (parametric data) and Fisher's exact test (categorical data). $p<0.05$ was significant.

Results

Baseline characteristics

No significant differences in age, gender, affected joint or initial CRP between groups (**Table 1**).

Table 1: Baseline Demographics and Clinical Data.

Characteristics	Intervention Group (n=12)	Control Group (n=12)	p-value
Age (years, mean \pm SD)	52.3 \pm 11.7	54.6 \pm 10.2	0.61
Male gender, n(%)	7(58.3)	8(66.7)	0.73
Affected joint (knee/hip/ankle)	8/3/1	7/3/2	0.89
Initial CRP (mg/L, mean \pm SD)	87.5 \pm 21.3	91.2 \pm 18.7	0.65

Primary outcome

Intervention group achieved clinical cure 7.4 days faster than controls ($p<0.001$) (**Table 2**).

Table 2: Time to Clinical Cure (days).

Group	Mean \pm SD	p-value
Intervention	14.2 \pm 3.5	<0.001
Control	21.6 \pm 4.8	-

Discussion

The 34% reduction in cure time with comprehensive nursing aligns with findings that structured infection control measures reduce microbial load⁴. Strict aseptic techniques minimized cross-contamination, while protocolized pain management improved patient compliance with mobilization⁵.

Early mobilization, safely implemented in the intervention group, likely preserved joint function by preventing adhesions-consistent with evidence that controlled movement enhances synovial fluid circulation without worsening inflammation⁶. The significant CRP reduction reflects synergistic effects of nursing interventions with antibiotic therapy⁷.

Limitations include small sample size and single-centre design. However, the standardized outcome measures and strict inclusion criteria strengthen validity. Future studies should explore cost-effectiveness of these interventions.

Conclusion

Comprehensive nursing interventions significantly accelerate recovery in septic arthritis, reducing inflammation, pain and complications while improving joint function. These findings support implementing structured nursing protocols for this condition.

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