

Warm Compress for Elderly with Gout Arthritis: Case Study

Gina Nurhidayah^{1*}, Tantri Puspita²

^{1,2}Nursing Profession Program, Karsa Husada Garut College, Garut, Indonesia

Abstract: The disease known as Gouty Arthritis, or simply Gout, is a condition that affects the joints due to an interference in metabolism, particularly the metabolism of purines, leading to high levels of uric acid in the blood. Elevated levels of uric acid can cause the formation of crystals in the joints and surrounding tissues, resulting in severe pain and potential damage to the joints. In the context of caring for elderly patients with Gouty Arthritis, a study involving warm compress therapy was conducted at the Orchid Griya Elderly in Garut Regency. The study utilized a descriptive case study approach, involving history taking, observation, physical examination, and medical notes. The participants were elderly patients with Gouty Arthritis who received warm compress therapy. The results of the study indicated that the main nursing problem, chronic pain, was effectively addressed through warm compress interventions based on Evidence Based Practice. The analysis revealed a decrease in the intensity of gouty arthritis pain with the use of warm compress therapy, suggesting that this approach can effectively increase blood flow to the affected area and accelerate the healing process.

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Corresponding Author: Gina Nurhidayah

Email: nurhidayahgina@gmail.com

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Phone*: +62896-6385-0177

Introduction

One of the Non-Communicable Diseases (NCDs) is gout or gout arthritis, commonly known to the public as uric acid disease. Gout is a degenerative disease characterized by an elevated level of uric acid in the blood and tends to be a type of rheumatism or joint inflammation. This condition is considered chronic, meaning it can persist for years or even a lifetime (Bland, 2013; Direito et al., 2021)

Gout is a form of inflammatory arthritis that occurs due to the deposition of monosodium urate crystals in and around the joints. The prevalence and incidence of gout vary widely according to the population studied and methods employed, but generally range from less than 1% to 6.8% in terms of prevalence and 0.58-2.89 per 1,000 person-years in terms

of incidence. It is more prevalent in men than in women, with increasing age, and in some ethnic groups. The prevalence of gout has been steadily increasing worldwide, and it is now estimated to affect around 3.9% of U.S. adults, which is approximately 8.3 million individuals. The overall prevalence of gout in the US has been found to have increased from 3.6% in 2011 to 5.1% in 2017-2018. Gout is also more common in men compared to women, with a ratio ranging from 3:1 to 10:1. The prevalence of gout is influenced by various factors such as genetic, lifestyle, and co-morbid risk factor profiles in different geographical populations (Roddy & Choi, 2014; Dehlin et al., 2020; Agustin et al., 2022; Yokose et al., 2023).

Uric acid disease, or medically known as Gouty Arthritis, is a joint disease caused by metabolic

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disturbances marked by high purine levels and elevated uric acid in the blood. The high level of acid in the blood exceeding normal limits leads to the accumulation of uric acid in joints and other body organs. This accumulation is what causes joint aches, pains, and inflammation (CDC, 2023; George & Minter, 2023)

Many people only address pain in uric acid sufferers through pharmacological methods, including the use of drugs like allopurinol to lower uric acid levels. Non-pharmacological therapy is highly recommended. One possible non-pharmacological therapeutic action to lower pain and inflammation levels is through warm compress application. Warm compress involves applying warm fluids to provide comfort, a sense of warmth, and pain reduction (Stanford Medicine, 2016; NIH, 2018 ; Anggraini & Apriani, 2020; Kurniajati & Prana, 2020)

Method

This case study describes the nursing implementation for an elderly patient with gout arthritis who was given warm compress therapy. The patient was randomly selected based on the criteria of experiencing joint pain, being able to speak, and being conscious. The patient's signs and symptoms at the time of assessment included pain and stiffness in the right leg, with compos mentis awareness (E:4, M:5, V:6), vital signs of blood pressure 130/80 mmHg, respiration: 20x/minute, pulse: 96x/minute, temperature: 36.5 °C, lower extremities often painful when standing for a long time and in the morning, slight swelling in the ankles, and muscle strength in the right leg was 3. The author used clean hand gloves, warm compress tools, and compress cover cloth. Data was recorded on the Nursing Care Form.

The warm compress intervention was carried out in accordance with the steps in the Indonesian National Nurse Unity (PPNI) planning guidelines, using the SDKI, SLKI, and SIKI books to determine nursing diagnosis, nursing goals and objectives, nursing plans, and to evaluate the given action to the patient. The main intervention in pain management was to identify the location, characteristics, duration, frequency, quality, and intensity of pain, identify the pain scale, identify nonverbal pain responses, identify aggravating and mitigating factors of pain, and provide warm compress therapy to reduce pain. The intervention was carried out in accordance with the Indonesian Nursing Intervention Standard (SIKI), which is based on evidence-based practice (EBP). The assessment was carried out on May 9, 2023, using anamnesis in the Orchid Griya Elderly Garut Regency room. A 78-year-old patient at Griya Garut Elderly suffered from joint pain due to gout arthritis for 1 year. Therefore, the main intervention that had been determined was carried out on May 10-12,

2023, in pain management. Participant agreed that their health data could be published anonymously.

The warm compress was administered daily for three days, each session lasting 20 minutes. A bottle filled with water at a temperature of 40°C-43°C, covered with cloth during application, was prepared. The implementation process involves heating the water to the desired temperature, placing it in a glass bottle, preparing a cloth or towel, attaching the bottle to the area experiencing joint pain, and covering it with additional fabric. After waiting for 20 minutes, the client asked for feedback regarding any reduction in pain intensity.

Result and Discussion

The warm compress was applied for 20 minutes. There was a decrease in the pain scale. The pain scale decreased from 5 (on a scale of 1-10) to 1 (on a scale of 1-10) with the intervention provided for 3 days, showing an average decrease of 1-2 on the pain scale per day (see table below).

Table 1. Pain scale with warm compress

Date	Pain Scale	
	Before	After
May 10 th	5	4
May 11 th	4	2
May 12 th	2	1

The interventions were carried out in accordance with the Indonesian Nursing Intervention Standards (SIKI), which are evidence-based. The semi-fowler position intervention is supported by research, which shows that the nursing care documentation, focusing on a diagnosis of gouty arthritis in the Orchid Room at Griya Elderly, Garut Regency, progresses through the stages of assessment, diagnosis, planning, implementation, and evaluation, utilizing evidence-based practices to address client issues.

This intervention case result was supported by some articles. This three-day warm compress intervention was also done by Aminah which was the level of pain was decreased in gouty arthritis patient (Aminah et al., 2022). The application of warm compress therapy has been found to have several benefits for individuals with gout or uric acid-related joint conditions. The findings from the articles indicate the benefits of warm compress such as reduction of joint pain, relaxed muscle, vasodilated of blood flow, alleviate of morning sickness and inhibition of painful impulses. Warm compress therapy has been shown to effectively reduce the pain scale associated with gout arthritis, ranging from mild to severe pain. Warm compresses can lead to increased relaxation of muscles, which can help reduce tension and discomfort in the affected areas. Besides that, it can promote vasodilation and increase

blood flow to the affected joints, aiding in the elimination of inflammatory products such as bradykinin, histamine, and prostaglandins, which contribute to local pain. Additionally, warm compress therapy can help alleviate morning stiffness, a common symptom associated with gouty arthritis, by promoting muscle relaxation and mobility. Moreover, the warm compress can stimulate closed nerve fibers' gates, inhibiting the transmission of painful impulses to the spinal cord and brain, thereby reducing the sensation of pain. These findings support the use of warm compress therapy as a non-pharmacological intervention to alleviate pain and discomfort in individuals with gouty arthritis. It is important to note that warm compress therapy should be used in conjunction with other appropriate treatments and under the guidance of healthcare professionals to ensure its safety and effectiveness for each individual case (Malanga et al., 2015; Wijaya et al., 2020; Susanti et al., 2021; Iswatun et al., 2023; Puspita et al., 2023).

The effectiveness of warm compress therapy in reducing pain can vary among individuals. Factors influencing this variability include age, environmental factors, and differences in pain perception (WANG et al., 2022). A systematic review and meta-analysis of randomized controlled trials showed that the application of heat therapy, such as hot pack and hot compress, could effectively reduce pain in patients with delayed onset muscle soreness (DOMS) (WANG et al., 2022). Another study suggested that hot compresses may have an ameliorative potential on sciatic nerve pain by increasing blood circulation and reducing inflammatory factors (Chan et al., 2022). Similarly, a narrative review highlighted the role of heat wrap therapy in the management of non-specific, mild-to-moderate low back pain, indicating that it reduced the impact of pain on everyday activities (Chan et al., 2022). Therefore, warm compress therapy, particularly heat therapy, has been shown to be effective in reducing pain in various conditions.

Conclusion

Applying warm compress therapy to patients with Gouty Arthritis at Griya Elderly in Garut Regency has proven effective. Through case analysis and referencing relevant articles, a noticeable reduction in pain intensity has been observed. The application of warm compress therapy contributes to increased blood circulation in the affected area, resulting in decreased pain and accelerated healing.

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