APPLICATION OF LEMONGRASS AND GINGER COMPRESSES FOR ACUTE PAIN IN PATIENTS WITH GOUT ARTHRITIS: A CASE STUDY

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Abstract

Gout arthritis is an inflammatory joint condition caused by the deposition of monosodium urate crystals, which can result in acute pain and interfere with daily activities. Complementary non-pharmacological interventions may be used to support pain management. This case study aimed to describe the application of lemongrass and ginger warm compresses as a complementary nursing intervention for acute pain in patients with gout arthritis. A descriptive case study approach was used involving two patients with gout arthritis and acute pain in Pondok Ranggon, Jakarta. Data were collected through interviews, observation, physical examination, and documentation. Warm lemongrass and ginger compresses were applied for 15–20 minutes daily for seven days. Pain intensity was assessed using the Numeric Rating Scale (NRS). Both patients experienced a reduction in pain intensity following the intervention. Patient 1 experienced a decrease in pain score from 6 to 3, accompanied by reduced pain complaints, a more relaxed condition, and improved comfort during daily activities. Patient 2 experienced a decrease from 4 to 3, accompanied by reduced pain in the right hand and increased comfort. The application of warm lemongrass and ginger compresses was accompanied by reduced pain intensity and improved comfort in both patients. This intervention may be considered as a complementary nursing approach to support acute pain management in patients with gout arthritis.

Keywords: Gout arthritis, Acute pain, Lemongrass and ginger compress.

1. INTRODUCTION

Gout arthritis is an inflammatory joint disorder associated with the accumulation of monosodium urate crystals in the joints, which can cause inflammation, swelling, warmth, restricted movement, and acute pain (1). Elevated uric acid levels and dietary patterns, particularly the consumption of purine-rich foods are among the factors associated with the occurrence of gout arthritis (2). The condition can interfere with daily activities and quality of life, particularly when acute attacks occur (3).

Gout arthritis remains a health concern in Indonesia. Based on the 2018 Basic Health Research (Riskesdas), the prevalence of joint disease in Indonesia was 11.9% based on health-worker diagnosis and 24.7% based on diagnosis or symptoms. In DKI Jakarta, the prevalence of joint disease based on physician diagnosis was 6.76%, while in East Jakarta it was 6.72%. The prevalence increased with age, reaching 21.40% among individuals aged 65–74 years (4). These data indicate that joint disorders remain an important health concern in the community.

Acute pain is one of the prominent manifestations of gout arthritis. During an acute attack, patients may experience severe pain accompanied by swelling, redness, warmth, and limited joint movement (5). Previous findings reported pain scores ranging from 4 to 9 among patients with gout arthritis, with a considerable proportion experiencing moderate to severe pain (6). Persistent or poorly managed pain may also trigger physiological stress responses and interfere with daily functioning.

Management of gout-related pain may involve pharmacological and non-pharmacological approaches (7). Non-pharmacological interventions include relaxation techniques, distraction, therapeutic modalities, and warm or cold compresses (8). Warm compresses may provide a warming

effect, promote peripheral vasodilation, increase local circulation, and contribute to muscle relaxation and comfort. In the original case study, warm compresses were applied at a temperature of 40–45°C for 15–20 minutes (9).

Lemongrass and ginger are natural ingredients that have been used as complementary approaches for pain management. Lemongrass (*Cymbopogon citratus*) is associated with a warming and relaxing effect, while ginger contains bioactive compounds with analgesic and anti-inflammatory properties (8,10). Previous studies reported reductions in pain intensity following the application of warm lemongrass compresses or ginger compresses in patients with gout arthritis. A study involving five respondents reported a reduction in pain scores from 5–7 before the intervention to 3–4 after warm lemongrass compresses (11). Another study involving older adults with gout reported a reduction in mean pain intensity following ginger compress application(11).

Previous evidence has also described the use of combined ginger and lemongrass warm compresses. Toto and Nababan reported a two-point reduction in pain scores among two older patients with gout arthritis following the intervention, while Desreza et al. reported a reduction in mean pain score from 6.33 to 2.67 following combined ginger and lemongrass warm compresses (10,12). These findings provide a basis for considering the combination as a complementary nursing intervention for pain management.

However, the application of combined lemongrass and ginger compresses for acute pain management in patients with gout arthritis remains limited, particularly in the Pondok Ranggon community. Therefore, this case study was conducted to describe the application of lemongrass and ginger warm compresses for acute pain management in patients with gout arthritis in Pondok Ranggon, Jakarta. The study focused on changes in pain intensity before and after the intervention.

2. METHODOLOGY

This study used a descriptive case study design to describe the nursing care provided to patients with gout arthritis experiencing acute pain through the application of warm lemongrass and ginger compresses. The study was conducted in Pondok Ranggon, Cipayung District, East Jakarta, DKI Jakarta, in May 2026. The intervention was implemented in the participants' homes for seven consecutive days.

Two female older adults with gout arthritis were selected using purposive sampling. The inclusion criteria were: a confirmed diagnosis of gout arthritis based on medical records or physician diagnosis; a nursing diagnosis of acute pain; uric acid levels above 7 mg/dL; acute pain with a Numeric Rating Scale (NRS) score of ≥4; age 50–75 years; residence in Pondok Ranggon; willingness to participate and sign informed consent; and the ability to communicate effectively. Participants with open wounds, skin irritation or damage at the intervention site, severe complications such as kidney disorders, chronic gout with tophi, or unwillingness to participate were excluded.

The intervention consisted of a warm compress prepared from boiled lemongrass (Cymbopogon citratus) and ginger (Zingiber officinale). The intervention was administered once daily for seven consecutive days, with each application lasting approximately 15–20 minutes. The compress temperature was maintained at 40–45°C and checked using a water thermometer before application. A washcloth was soaked in the prepared infusion, wrung until moist, and applied to the painful joint area.

Data were collected through structured interviews, direct observation, physical examination, and documentation. Pain intensity was assessed using the Numeric Rating Scale (NRS), ranging from 0 to 10. Scores of 1–3 represented mild pain, 4–6 moderate pain, and 7–10 severe pain. Pain intensity was assessed before and after each intervention to monitor changes throughout the seven-day intervention period. The instruments included nursing assessment forms, NRS, observation sheets, a water thermometer, and the standard operating procedure for lemongrass and ginger compresses.

Prior to implementation, the researcher prepared the study instruments, obtained permission from the Pondok Ranggon community health center, and selected participants according to the inclusion and exclusion criteria. Participants were informed about the study procedures and provided written informed consent. An initial assessment was then conducted through interviews, observation, physical examination, and NRS pain measurement. The lemongrass and ginger compress was subsequently

administered once daily for seven days, with pain intensity recorded before and after each intervention. All participant responses and changes in condition were documented in the nursing care records.

Ethical principles were applied throughout the study. Participants received information regarding the purpose, procedures, expected benefits, and potential risks of the intervention, including discomfort, skin irritation, or redness related to the warm compress. Participation was voluntary, informed consent was obtained before the intervention, and participants retained the right to refuse or withdraw from the study at any time. Confidentiality and participant safety were also maintained throughout the study.

3. RESULTS AND DISCUSSION

3.1 Participant Characteristics

This case study involved two female patients with gout arthritis and acute pain who met the inclusion criteria. The first participant (Mrs. W) was 61 years old and reported pain in the toes and left sole of the foot, which increased during activity. Her initial pain intensity was 6 on the Numeric Rating Scale (NRS), and her uric acid level was 9 mg/dL. The second participant (Mrs. M) was 55 years old and reported pain in the fingers of the right hand, which increased when gripping or lifting objects. Her initial pain intensity was 4, with a uric acid level of 7.1 mg/dL

3.2 Nursing Diagnosis and Intervention

The assessment identified acute pain (D.0077) related to physiological injury agents as the primary nursing diagnosis in both participants (13). The diagnosis was supported by the presence of pain associated with gout arthritis, increased pain during activity, and the participants' reported pain intensity measured using the Numeric Rating Scale (NRS). The nursing intervention was Pain Management (I.08238) with the expected outcome of decreased pain level based on the Indonesian Nursing Outcome Standards (SLKI) (14,15). The intervention included assessment of pain location, characteristics, duration, frequency, quality, and intensity; identification of factors that aggravated or relieved pain; monitoring of pain responses; provision of non-pharmacological pain management; and application of a warm lemongrass and ginger compress. The warm compress was administered once daily for 15–20 minutes over seven consecutive days, with the temperature maintained at approximately 40–45°C.

3.3 Changes in Pain Intensity

The application of warm lemongrass and ginger compresses was performed once daily for seven consecutive days. Pain intensity was assessed before and after each intervention using the NRS.

Mrs. W, aged 61 years, reported pain in the toes and left sole, particularly during activity. Her initial pain intensity was 6 on the NRS, with a uric acid level of 9 mg/dL. During the seven-day intervention, her pain intensity gradually decreased, although an increase in pre-intervention pain to 5 was observed on the fifth day, which was associated with excessive physical activity. Following reinforcement of activity restriction and continuation of the intervention, the pain intensity decreased again. By the seventh day, her NRS score had decreased from 6 to 3. Mrs. M, aged 55 years, reported pain in the fingers of the right hand, particularly when gripping or lifting objects. Her initial NRS score was 4, with a uric acid level of 7.1 mg/dL. Pain intensity remained unchanged during the first two days and decreased from 4 to 3 beginning on the third day, remaining at this level through the seventh day. The slower reduction was associated with continued use of the affected hand during daily activities.

Following seven consecutive days of nursing intervention, both participants demonstrated improvement in pain-related outcomes. Mrs. W showed a reduction in pain intensity from 6 to 3, while Mrs. M decreased from 4 to 3. Both participants reported reduced pain, appeared more relaxed, and were able to perform light activities more comfortably. Based on the nursing evaluation, the acute pain problem was partially resolved in both participants because pain

intensity had decreased but remained at an NRS score of 3. Both participants were advised to continue the warm lemongrass and ginger compress independently when pain occurred, maintain a low-purine diet, avoid activities that could aggravate pain, and undergo routine health monitoring.

Pain assessment was conducted through pain observation using the NRS scale, as described below.

Table 1. *Observation of Pain Intensity Using the NRS Scale*

Day	Mrs W		Mrs M	
	Pre	**Post**	**Pre**	**Post**
1	6	5	4	4
2	5	4	4	4
3	5	4	4	3
4	4	4	3	3
5	5	4	3	3
6	4	3	3	3
7	3	3	3	3

The results demonstrated a gradual reduction in pain intensity in both participants. In Mrs. W, the pain score decreased from 6 before the first intervention to 3 by the seventh day. On the fifth day, the pre-intervention pain score increased to 5, which was reported in the case study to be associated with excessive physical activity. Following continued intervention and education regarding activity restriction, the pain score decreased again on the sixth and seventh days.

In Mrs. M, the initial pain score was 4 and remained unchanged after the intervention on the first two days. A reduction was observed beginning on the third day, from 4 to 3, and the score remained at 3 through the seventh day. The case study reported that the slower reduction was associated with continued use of the affected hand for gripping and lifting objects during daily activities.

At the end of the seven-day intervention period, both participants had a pain score of 3. Mrs. W experienced a reduction of 3 points from baseline, while Mrs. M experienced a reduction of 1 point. Both participants also reported reduced pain and greater comfort during light activities.

3.4 Discussion

The findings of this case study showed a gradual reduction in pain intensity following the application of warm lemongrass and ginger compresses for seven consecutive days. Mrs. W experienced a reduction in pain intensity from 6 to 3, while Mrs. M experienced a reduction from 4 to 3. In addition to the reduction in Numeric Rating Scale (NRS) scores, both participants reported improved comfort and less pain during daily activities. These findings indicate that the intervention was accompanied by improvement in pain-related complaints in both participants.

The reduction in pain observed in Mrs. W was more pronounced than in Mrs. M. Mrs. W initially reported moderate-to-severe pain with an NRS score of 6, which gradually decreased to 3 by the seventh day. However, an increase in pre-intervention pain intensity to 5 was observed on the fifth day. According to the case study observations, this increase was associated with excessive physical activity that aggravated the painful area. Following education regarding activity restriction and continuation of the intervention, the pain intensity decreased again on the sixth and seventh days. This finding highlights the importance of activity management as part of nursing care for patients with gout arthritis.

In Mrs. M, the reduction in pain occurred more slowly. The initial NRS score was 4 and remained unchanged during the first two days. A reduction to 3 was observed beginning on the third day and remained stable until the seventh day. The case study reported that Mrs. M continued to use the affected hand for gripping and lifting objects, which may have contributed to continued mechanical stress on the painful area. Therefore, differences in activity patterns and pain location may have contributed to the different patterns of pain reduction between the two participants.

The observed findings are consistent with previous studies included in the original case study. Sowwam et al. (2022) reported the use of ginger compresses as a non-pharmacological intervention for reducing pain associated with elevated uric acid in older adults (16). Toto and Nababan (2023) also reported reductions in pain following the application of non-pharmacological therapy involving ginger and lemongrass compresses in older adults with gout arthritis (12). In addition, Rosima et al. (2025) reported the application of warm lemongrass-water compresses for joint pain associated with gout (11). These findings provide supporting evidence for the use of warm herbal compresses as a complementary approach in pain management.

The possible contribution of the intervention can be explained by both the thermal effect of the warm compress and the properties of the herbal ingredients. The warm temperature may promote local vasodilation and improve circulation, while also providing a relaxing effect to the affected area. The original case study describes ginger as containing active compounds such as gingerol and shogaol, while lemongrass contains citral. These compounds are discussed as having anti-inflammatory and analgesic properties that may support reduction of pain and discomfort.

The results also demonstrate that the response to complementary therapy may differ between individuals. Differences in age, pain location, baseline pain intensity, uric acid level, physical activity, and individual response were identified in the case study as factors that may influence the pattern of pain reduction. Mrs. W had an initial uric acid level of 9 mg/dL, whereas Mrs. M had a level of 7.1 mg/dL. Their painful areas also differed, with Mrs. W experiencing pain in the toes/left sole and Mrs. M experiencing pain in the fingers of the right hand. These differences should be considered when interpreting the observed changes.

From a nursing perspective, the intervention may be considered a complementary measure within pain management rather than a replacement for medical treatment. The application of warm lemongrass and ginger compresses was accompanied by improved comfort and reduced NRS scores in both cases. However, both participants still had an NRS score of 3 at the end of the seventh day, indicating that the pain had not completely disappeared. Therefore, continued nursing management, appropriate activity modification, dietary management, routine health monitoring, and adherence to prescribed treatment remain important.

Overall, this case study suggests that warm lemongrass and ginger compresses may be incorporated as a complementary nursing intervention to support pain management in patients with gout arthritis. Nevertheless, because this study involved only two participants and used a descriptive case-study design, the findings should be interpreted as observations from these cases rather than evidence of treatment effectiveness that can be generalized to all patients with gout arthritis.

4. CONCLUSIONS

The application of warm lemongrass and ginger compresses for 15–20 minutes daily over seven consecutive days was accompanied by a reduction in pain intensity in both patients with gout arthritis. Mrs. W experienced a decrease in pain intensity from an NRS score of 6 to 3, while Mrs. M experienced a decrease from 4 to 3. Both participants also reported improved comfort and reduced pain during daily activities.The different patterns of pain reduction indicate that individual characteristics, pain location, physical activity, baseline pain intensity, and individual responses may influence the outcome of complementary pain management. The intervention may therefore be considered as a complementary nursing intervention to support pain management in patients with gout arthritis. However, because this study involved only two participants and used a descriptive case-study design, the findings cannot be generalized to the wider population. Further studies involving larger samples and more rigorous research designs are needed to evaluate the effects of warm lemongrass and ginger compresses on pain intensity in patients with gout arthritis.

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