CASE STUDY : APPLICATION OF RED GINGER WARM COMPRESS THERAPY FOR ACUTE PAIN MANAGEMENT IN ELDERLY PATIENTS WITH RHEUMATOID ARTHRITIS

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ABSTRACT

Background : Rheumatoid arthritis is a chronic inflammatory disease that affects the joints, causing pain, stiffness, and limited mobility. It can involve multiple joints, particularly those in the hands and feet. Rheumatoid arthritis is commonly associated with joint pain, tenderness, stiffness, reduced physical activity, structural damage, and poor quality of life. One non-pharmacological method to reduce pain in rheumatoid arthritis patients is the application of red ginger warm compress therapy. Objective: This study aimed to determine the effectiveness of red ginger warm compress therapy in reducing pain among patients with rheumatoid arthritis. Case Study Method:This research employed a descriptive qualitative design using a case study approach involving two respondents diagnosed with rheumatoid arthritis experiencing acute pain. Data were collected through observation sheets, structured interviews, and the Numeric Rating Scale (NRS) to measure pain intensity. Results: After applying red ginger warm compress therapy for seven consecutive days, a decrease in pain intensity was observed in both patients. In patient one, the pain score decreased from 5 (moderate pain) to 2 (mild pain), while in patient two, the pain score decreased from 6 (moderate pain) to 3 (mild pain). Conclusion and Recommendation: The application of red ginger warm compress therapy effectively reduced pain among patients with rheumatoid arthritis. It is recommended that this therapy be continuously applied as a complementary intervention to manage rheumatoid arthritis pain

***Keywords**: Red Ginger Warm Compress Therapy; Rheumatoid Arthritis; Acute Pain*

INTRODUCTION

Rheumatoid arthritis is a chronic inflammatory disease that affects the joints, causing pain, stiffness, and limited movement. This condition can affect any joint in the body, including those in the hands and feet (Nasrullah et al., 2021). Rheumatoid arthritis is consistently associated with persistent joint pain, tenderness, stiffness, restricted physical activity, structural damage, and poor quality of life. Prolonged morning stiffness is a clinical indicator of rheumatoid arthritis. Joint pain and stiffness often last for more than 30 minutes in the morning or after a long period of rest. This pain can interfere with daily activities and negatively impact the patient's quality of life. In addition to joint involvement, rheumatoid arthritis may also cause fatigue, physical impairment, and a decline in quality of life (Budiarti, 2022).

Rheumatoid arthritis can be detected using specific markers, one of which is the rheumatoid factor — a protein released when an individual develops rheumatoid arthritis (Soryatmodjo et al., 2021). The principle of rheumatoid factor testing involves a reagent containing latex particles coated with human Immunoglobulin G (IgG). When the reagent is mixed with IgG, an agglutination reaction occurs, indicating a positive response. The normal level of rheumatoid factor in serum is below 8 IU/mL (Wuan et al., 2023).

According to data from the World Health Organization (WHO), the number of people suffering from rheumatoid arthritis worldwide has reached approximately 355 million individuals. Similarly, the Global RA Network (2021) reported that more than 350 million people globally are affected by rheumatoid arthritis. Data from the Centers for Disease Control and Prevention (CDC, 2021) indicate that older adults represent a significant proportion of rheumatoid arthritis cases, with 60% occurring among individuals aged 18–64 years and 50% among those aged over 65 years. In Indonesia, data from Riskesdas (2018) revealed 47,000 cases of rheumatoid arthritis, accounting for 7.10% of 680,000 surveyed samples. The majority of patients were older adults, comprising 15–18% of the population, and 8% were women. In North Sumatra, the prevalence of rheumatoid arthritis reached 21.8% of the total population, or approximately 732,000 patients, out of 14,248,386 residents, with 34.17% categorized as elderly (Riskesdas, 2023).

If left untreated, rheumatoid arthritis can lead to varying degrees of disability, ranging from joint deformities to paralysis, and may even increase the risk of mortality. This condition significantly reduces quality of life, limits daily functioning, and may contribute to psychological complications such as depression (Khusna, 2021). It is estimated that about 40%

of rheumatoid arthritis patients experience joint damage complications, with severe joint destruction occurring in approximately 1.3% of cases (Huang, 2022).

Pain is one of the most common complaints among patients with rheumatoid arthritis. Pain is defined as an unpleasant sensory and emotional experience that increases in intensity due to tissue damage. When pain occurs in the joints, it interferes with joint mobility and affects surrounding muscles and tissues, often leading to muscle spasms (Fitriana, 2021). According to Sari et al. (2023), patients with rheumatoid arthritis frequently experience joint pain and stiffness, particularly affecting the movement of the limbs. Rheumatoid arthritis can affect nearly all joints in the body, especially those that are frequently used in daily activities. One of the therapies that can be used to reduce pain in rheumatoid arthritis is the red ginger warm compress therapy, as red ginger contains gingerol and shogaol, compounds with pungent properties that provide anti-inflammatory effects and help alleviate pain (Ilham, 2020). According to the study by Wijaya and Ferasinta (2023), before the administration of red ginger warm compress therapy, 86.7% of patients experienced moderate pain, which decreased to 46.7% experiencing mild pain after the intervention. Similarly, a study by Putri et al. (2023) reported that before the application of red ginger warm compress therapy, 47.8% of respondents experienced moderate pain, which decreased to 50.0% experiencing mild pain after the therapy. The purpose of this study is to describe the application of red ginger warm compress therapy in reducing pain among patients with rheumatoid arthritis.

Based on survey data obtained from the Pandan Health Office in Central Tapanuli Regency, the number of people with Rheumatoid Arthritis was 111 in 2020, 83 in 2021, 93 in 2022, 160 in 2023, and 170 in 2024, increasing (Dinkes, 2025). This study aims to describe the effectiveness of red ginger warm compress therapy in reducing pain in patients with rheumatoid arthritis.

METHOD

The research design used in this study was a descriptive case study. The participants consisted of two elderly patients diagnosed with rheumatoid arthritis who experienced acute pain with pain intensity ranging from mild to severe (1–10 on the Numeric Rating Scale). The participants were between 60 and 80 years old. The data collection process began with an assessment conducted through direct interviews, observations, and physical examinations using the head-to-toe technique. The researcher measured the participants' pain levels before

administering the red ginger warm compress therapy using the Numeric Rating Scale (NRS), in which both participants initially reported moderate pain. The intervention was implemented twice daily for seven consecutive days according to the Standard Operating Procedure (SOP) for red ginger warm compress therapy. After each treatment period, pain levels were again measured using the NRS once daily for seven consecutive days, showing a decrease from moderate to mild pain intensity.

RESULTS AND DISCUSSION

1. Participant Characteristics

This study aims to describe the effectiveness of red ginger warm compress therapy in reducing pain in patients with rheumatoid arthritis. After conducting data analysis, we found the following findings

Table 1. Participant characteristics

No	Characteristics	Case I	Case 2
1	Name	Ny. R	Ny. S
2	Age	61 years old	70 years old
3	Sex	Female	Female
4	Occupation	Farmer	Farmer
5	Education	Elementary school	Elemnetary School

Based on the assessment results, Participant 1 was a 61 year old, female with an occupation as a farmer and an elementary school education. Participant 2 was a 70 year old female, also working as a farmer, with an elementary school education. The results of the study found that respondents were women, with Rheumatoid Arthritis being more common in women. This is in line with research conducted by Pangi (2023) which found that women experienced Rheumatoid Arthritis (84.5%) and men (15.5%). This research is also in line with research conducted by Wahid with research on women (70%) and men (30%) (Wahid, 2021). The elderly are also susceptible to Rheumatoid Arthritis and researchers are also interested in conducting research on elderly patients. Research

conducted by Kamiati & Daulay found that the ages of 44-59 years (52.6%), 60-70 years (36.3%) and 71-80 years (11.1%) (Kamiati & Daulay, 2023).

2. Before intervention given

After conducting data analysis, we found the following findings

Tabel 2. Before Intervention Given

Day	Intervention			
	Case 1	Response	Case 1	Response
Before intervention is given	1. PQRST 2. Scale painful 3. Grimace	1. PQRST Q: The cause of pain is due to the disease suffered and when doing heavy work. Q: The patient says it hurts feels like being stabbed needles and tingling R: The patient said it was painful. Felt diarrhea knee left and right S: Scale pain 5 Q: Pain felt in the morning 2. Scale painful 5 (pain currently) 3. Grimace value 2 (quite improved)	Review scale Patient pain and perform warm compress therapy red ginger	1. PQRST Q: The cause of pain is due to illness suffered and when doing heavy work. Q: The patient said the pain felt like in stabs needles, tingling, numbness, stiffness, redness and swelling R: The patient said painful in feel in area knee left and right feet S: Scale painful 6 Q: Pain felt in the morning and day. 2. The pain scale decreased after being given a compress become scale 5

				(pain currently) 3. Grimace mark 2 (Enough)

Based on the table before the intervention was given, the data obtained Patient one PQRST P: The cause of pain is due to the disease suffered and when doing heavy work. Q: The patient said the pain felt like being pricked by needles and tingling, R: The patient said the pain was felt in the left and right knee area, S: Pain scale 5, T: Pain was felt in the morning Pain scale 5 (moderate pain), grimacing value 2 (quite increased). Patient two PQRST P: The cause of pain is due to the disease suffered, and when doing heavy work. Q: The patient said the pain felt like being pricked by needles, tingling, numbness, stiffness, redness and swelling, R: The patient said the pain was felt in the left and right knee area, S: Pain scale 6, T: Pain was felt in the morning and day, pain scale 6 (moderate pain), grimacing value 2 (quite increased)

3. Implementation Intervention

After conducting data analysis, we found the following findings

Table Implementation Intervention

Table 3. Implementation Intervention

Day	Intervention			
	Case 1	Response	Case 1	Response
Day first	4. PQRST 5. Scale painful 6. Grimace	2. PQRST Q: The cause of pain is due to the disease suffered and when doing heavy work. Q: The patient says it hurts. feels like being	Review scale Patient pain and perform warm compress therapy red ginger	2. PQRST Q: The cause of pain is due to illness suffered and when doing heavy work. Q: The patient said the pain felt like in stabs needles,

		stabbed needles and tingling R: The patient said it was painful. Felt diarrhea knee left and right S: Scale pain 5 Q: Pain felt in the morning 4. Scale painful 5 (pain currently) 5. Grimace value 2 (quite improved)		tingling, numbness, stiffness, redness and swelling R: The patient said painful in feel in area knee left and right feet S: Scale painful 6 Q: Pain felt in the morning and day. 2. The pain scale decreased after being given a compress become scale 5 (pain currently) 3. Grimace mark 2 (Enough)
The seventh day	Reviewing the scale Patient pain and perform warm compress therapy red ginger	1. PQRST Q: The cause of pain is due to the disease suffered and when doing heavy work. Q: The patient says it hurts. feels like being stabbed needle and tingling R: The patient said it was painful. felt diarrhea knee	Reviewing the scale Patient pain and perform warm compress therapy red ginger	1. PQRST Q: The cause of pain is due to the disease suffered and when doing heavy work. Q: The patient says it hurts. feels like being pricked by needles, tingling, numbness, stiffness, redness and swelling R: The patient said it

		left and right S: Scale pain 2 Q: Pain felt in the morning 2. Scale decreased pain after being given therapy becomes scale 2 (mild pain) 3. Grimaces begin to subside value 4 (quite a decline)		was painful. felt in the knee area of the left and right legs S: Scale painful 3 2. Pain scale decreased after being given therapy becomes scale 3 (mild pain) 3. Grimaces begin to subside value 4 (quite a decrease) .

Based on therapy on the first and second day of Patient PQRST P: The cause of pain is due to the disease suffered and when doing heavy work, Q: The patient said the pain felt like being pricked by needles and tingling, R: The patient said the pain was felt in the left and right knee area, S: Pain scale 5, T: Pain was felt in the morning. Scale 5 (moderate pain) and complaints of grimacing score 2 (quite increased). Patient two with intervention PQRST P: The cause of pain is due to the disease suffered and when doing heavy work, Q: The patient said the pain felt like being pricked by needles, tingling, numbness, stiffness, redness and swelling, R: The patient said the pain was felt in the left and right knee area, S: Pain scale 6, T: Pain was felt in the morning and evening. Scale 6 (moderate pain) and complaints of grimacing score 2 (quite increased). On the third day, patient one's pain complaints decreased after being given warm compress therapy with red ginger on a scale of 4 (moderate pain) and complaints of grimacing also decreased with a value of 4 (sufficiently decreased), Ttv Td: 142/80 mmHg, Rr: 22 x / minute, Hr: 96x / minute, T: 36.5 oC. Patient two's pain also decreased after being given warm compress therapy with red ginger on a scale of 5 (moderate pain), complaints of grimacing also decreased with a value of 4 (sufficiently decreased), Ttv Td: 150/80 mmHg, Rr: 22x / minute, Hr: 97x / minute, T: 36.5 oC. On the fourth day the pain scale can be reduced after being given warm compress therapy with red ginger with a scale of 3 (mild pain) and complaints of grimaces also decreased with a value of 4 (sufficiently decreased), Ttv Td: 136/80mmHg, Rr: 22 x/minute, Hr: 96x/minute, T: 36.5 oC. Patient two pain scales can be reduced after being given warm compress therapy with red ginger with a scale of 4 (moderate pain), complaints of

grimaces also decreased with a value of 4 (sufficiently decreased), Ttv Td: 146/90 mmHg, Rr: 22 x/minute, Hr: 96x/minute, T: 36.5 oC. On the fifth day, the pain scale decreased after being given warm red ginger compress therapy with a scale of 3 (mild pain) and complaints of grimacing also decreased with a value of 4 (quite a decrease), Ttv Td: 130/90 mmHg, Rr: 24 x/minute, Hr: 96x/minute, T: 36.5 oC. Patient two pain scales can decrease after being given warm compress therapy with red ginger on a scale of 3 (mild pain), complaints of grimaces also decreased with a value of 4 (sufficient decrease), Ttv Td: 140/80 mmHg, Rr: 24 x / minute, Hr: 95x / minute, T: 36.5 oC On the sixth day the pain scale can decrease after being given warm compress therapy with red ginger on a scale of 2 (mild pain) and complaints of grimaces also decreased with a value of 4 (sufficient decrease), Ttv Td: 120/90 mmHg, Rr: 24 x / minute, Hr: 97x / minute, T: 36.5 oC Patient two pain scales can decrease after being given warm compress therapy with red ginger on a scale of 3 (mild pain), complaints of grimaces also decreased with a value of 4 (sufficient decrease), Ttv Td: 120/80 mmHg, Rr: 22 x / minute, Hr: 98x/minute, T: 36.5 oC.On the seventh day the pain scale can be reduced after being given warm compress therapy with red ginger on a scale of 2 (mild pain) and complaints of grimaces also decreased with a value of 4 (quite decreased), Ttv Td: 120/70 mmHg, Rr: 24 x / minute, Hr: 95 x / minute, T: 36.5 oC. Patients two pain scales can be reduced after being given warm compress therapy with red ginger on a scale of 3 (mild pain), complaints of grimaces also decreased with a value of 4 (quite decreased), Ttv Td: 120/80 mmHg, Rr: 22 x / minute, Hr: 97 x / minute, T: 36.5 oC. According to research by Sari et al, (2023) pain experienced by Rheumatoid Arthritis patients such as causing pain and stiffness in the joints and limbs. Rheumatoid Arthritis can attack almost all joints, especially the wrist joints, knuckles, knees, and ankles. Rheumatic pain is often experienced in the morning, resulting in disrupted activities in the elderly. Pain experienced by Rheumatoid Arthritis Patients can be reduced if given warm compress therapy with red ginger for 7 consecutive days. This therapy has been proven successful and is in line with the therapy of Wijaya and Ferasinta, (2023) before being given a warm compress with red ginger, moderate pain (46.7%) and after being given a warm compress with red ginger, moderate pain can decrease to mild pain (86.7%). According to research by Putri et al, (2023) before being given a warm compress with red ginger, moderate pain (47.8%) and after being given a warm compress with red ginger, moderate pain can decrease to mild pain (50.0%).

CONCLUSION

In patients before undergoing red ginger warm compress therapy, an examination was carried out with PQRST P: The cause of pain was due to the disease suffered and when doing heavy work, Q: The patient said the pain felt like being stabbed with a needle and tingling, R: The patient said the pain was felt in the left and right knee area, S: Pain scale 5, T: Pain was felt in the morning, Pain scale (5), grimacing value 2 (quite increased). After undergoing red ginger warm compress therapy from the first day to the seventh day, the pain scale examination (2), grimacing (4) was quite decreased.

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