Application of Dry Warm Compress as Acute Pain Management for Gastritis at Pandanarang Hospital of Boyolali

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Abstract
Gastritis is inflammation of the gastric mucosa by bacteria or irritating substances which causes acute pain problems. The study aims to describe the management of acute pain in gastritis patients with warm compress. The type of research is a descriptive case study with a nursing care approach. Management was carried out for 3 days with findings at the pain assessment stage with a numerical pain scale, pain scale was 6 (moderate), major and minor signs of pain were found, the patient complained of heartburn, appeared to be grimacing, appeared to be holding the area of pain, appeared to be moaning in pain, and complained of difficulty sleeping. The nursing diagnosis established is acute pain related to a physiological injurious agent. The intervention took the form of pain management by implementing dry warm compress with a duration of 30 minutes for 3 days. The evaluation obtained a numerical pain scale score, namely scale 3 (mild pain), major and minor signs of pain were found. The patient said the heartburn had decreased, looked relaxed, did not hold the area of pain, did not groan in pain, and complaints of difficulty sleeping decreased. Management analysis, namely the problem is partially resolved. It is necessary to add a combination of other interventions in the management of acute pain in gastritis patients.

Introduction

Indonesia is currently facing an increasing number of health problems caused by changes in the lifestyle of its society. Furthermore, the increase in life expectancy, along with improvements in economic status and health services, also plays a role in the increasing number of inflammatory diseases. Gastritis is one of the health problems affecting the digestive tract. The stomach's main function for the body is to receive food and act as a temporary storage space. All food is digested and mixed with stomach acid and prepared for digestion by the intestines (Dillasamola, 2023).

Gastritis is one of the disorders of the digestive tract that frequently occurs worldwide. Based on data from the World Health Organization (WHO), gastritis is one of the main causes of global morbidity, especially in developing countries. In 2020, WHO reported that over 50% of the world's population suffered from digestive disorders, including gastritis, due to poor diet, stress, and bacterial infections such as Helicobacter pylori (WHO, 2020). In Indonesia, gastritis is one of the diseases commonly found in health service facilities. Data from the Ministry of Health of the Republic of Indonesia shows that in 2021, the prevalence of gastritis reached 274,396 reported cases in hospitals (Kemenkes RI, 2021).

Gastritis is usually caused by an irregular eating pattern, which makes the stomach more sensitive when the amount of stomach acid increases. When the eating pattern is inconsistent, the stomach will have difficulty adapting. If this condition continues, an excess of stomach acid can occur, leading to irritation of the gastric mucosa and resulting in gastritis. Pain is one of the signs of someone experiencing gastritis. The pain that occurs in gastritis is caused by damage to the stomach lining, which can increase chemical substances such as prostaglandin and histamine, which then stimulate the pain nerves in the stomach (Suwindri et al., 2021).

The pain caused by mucosal damage can be managed using the method of applying dry warm compress. This dry warm compress is a method of compression carried out by attaching a warm water bag (warm water bottle) with a temperature of 50-60 degrees. The use of warm compress for gastritis is proven to reduce pain (Wiji, 2024). Dry warm compress is one of the non-pharmacological interventions that is effective and safe for managing acute pain in gastritis. Its use can be done as a complementary therapy along with other medical treatments given by the doctor (Sari et al., 2023). Based on the existing problems and background, the

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author is interested in taking the nursing care case study titled " Application of Dry Warm Compress as Acute Pain Management for Gastritis at Pandanarang Hospital of Boyolali."

Methods

This research is a descriptive case study in the form of nursing care, which aims to accurately describe the nursing process in the management of acute pain in gastritis patients using the dry warm compress method. The study was conducted at Pandanarang General Hospital of Boyolali from February 18–20, 2025, with subjects being gastritis patients experiencing acute pain in the epigastric area who met certain criteria. Data collection was carried out through interview, observation, physical examination, and documentation study, using a purposive sampling technique with 1 respondent. The instruments used included the nursing assessment format, the NRS (Numeric Rating Scale) pain scale, and the SDKI pain assessment form. Data analysis was conducted through the interpretation of documentation compared with relevant theory to design nursing interventions and evaluation. This research also considered ethical aspects such as informed consent, anonymity, and confidentiality of the respondent's data.

Results and Discussion

The study was carried out at Pandanarang General Hospital of Boyolali, located at JL. Kantil No 14, Lorjurang, Pulisen, Boyolali District, Boyolali Regency, Central Java. On Tuesday, February 18, 2025, the assessment was conducted in the Panuluh room number 20 with a diagnosis of gastritis. The methods used were alloanamnesis and autoanamnesis, which involved the patient, their family, nurses, and medical records as supporting media.

Respondent Characteristics

The research respondent, initials Ms. H, is female, 23 years old, with a final education of D3 Midwifery, single marital status, Muslim religion, Javanese ethnicity, speaking Javanese and Indonesian. The patient is currently unemployed, finishing her studies as a student, and resides in Winadadi, Banjarnegara.

Assessment

The assessment in this management used the medical-surgical nursing assessment format and focused on pain using the NRS (Numeric Rating Scale) and the assessment form for major and minor signs and symptoms of acute pain from the Indonesian Nursing Diagnosis Standard (SDKI, 2017). The assessment results obtained the following data: The pre-test result of the pain assessment using the NRS questionnaire showed the respondent rated the pain at a pain scale of 6 (moderate pain). The focused data assessment results from the SDKI major signs and symptoms questionnaire were: the patient complained of epigastric pain, appeared to be grimacing, appeared to be holding the painful area, was moaning in pain, and complained of difficulty sleeping.

Assessment is the initial stage of the nursing process and a systematic way to collect data from various sources to evaluate and understand the patient's health status (Rinawati, 2018). The assessment results showed the respondent, initial Ms. H, is 23 years old and female. This aligns with research stating that gender influences the incidence of gastritis, especially the female gender (Maidartati et al., 2021; Safii & Andriani, 2019; Suwindri et al., 2021). Furthermore, research by Arikah & Muniroh (2015) also revealed that women are 6.667 times more likely to experience gastritis than men, meaning women have a higher risk of developing gastritis.

In this study, the author performed a pain assessment using the NRS (Numeric Rating Scale) method. As stated by Nurcahayaningtyas et al. (2024), the NRS is a unidimensional scale that measures pain intensity using numbers, ranging from 0 to 10. NRS values can be used to assess pain conveyed verbally or through images. The NRS classification consists of 1-3 for mild pain, 4-6 for moderate pain, and 7-10 for severe pain. The assessment results using the NRS method showed the respondent rated the pain at a scale of 6 (moderate pain). According to Nuryanti et al. (2020), the majority of gastritis patients experience moderate-level pain, with 40% feeling pain at scale 6, 33.3% at scale 5, and 26.7% at scale 4. This data proves that most gastritis patients exhibit a moderate pain scale. Moderate pain is a state where a person feels a higher level of discomfort. Generally, this pain starts to make a person uncomfortable and can interfere with daily activities (Pinzon, 2016). Pain arises due to tissue damage that releases chemical substances. These substances can stimulate pain receptors and cause the formation of pain signals. These signals are then sent through the spinal nerves to the brain. The brain automatically releases neurotransmitters to reduce the pain (Khomariyah et al., 2021).

The assessment results obtained from the SDKI major and minor data questionnaire were as follows: the patient complained of epigastric pain, appeared grimacing, held the painful area, moaned in pain, and experienced difficulty sleeping. This is consistent with the theory cited from Tim Pokja SDKI DPP PPNI (2016), which states that individuals experiencing acute pain will show main signs and symptoms such as: complaining of pain, looking grimacing,

protective behavior (e.g., vigilance, avoiding painful positions), restlessness, increased pulse rate, and difficulty sleeping. The theory according to Delina (2020) explains that acute pain symptoms include: increased blood pressure, facial grimacing, crying, and moaning in pain. The pain assessment results achieved 100% of the acute pain signs and symptoms in accordance with the Indonesian Nursing Diagnosis Standard (SDKI).

Nursing Diagnosis

Based on the data collected by the author through the assessment above and in accordance with the criteria of the SDKI, the author concluded that the established nursing diagnosis is Acute Pain related to a physiological injurious agent (code D.0077). This data met the requirements according to the major signs and symptoms for the Acute Pain diagnosis. The acute pain diagnosis became the primary priority among the nursing problems that arose. The nursing diagnosis raised in Ms. H's case was Acute Pain related to a physiological injurious agent, evidenced by the respondent complaining of pain with a scale of 6. This diagnosis was established according to the Indonesian Nursing Diagnosis Standard (SDKI).

The data analysis found 100% of the signs and symptoms supporting the defining characteristics of acute pain: the major signs were complaining of pain, pain with a scale of 6, appearing grimacing, appearing to hold the painful area, appearing to moan in pain, and difficulty sleeping. Theoretically, in determining a nursing problem or diagnosis, a minimum of 80% of the major signs and symptoms is required. Since 100% of the major signs and symptoms were found in this case, the author established the nursing diagnosis of acute pain related to a physiological injurious agent with code D.0077.

According to Tim Pokja SDKI DPP PPNI (2016), acute pain with code D.0077 is an experience involving the five senses or emotions, related to actual tissue damage or function that occurs suddenly or slowly. Its intensity level can vary from mild to severe and usually lasts no longer than 3 months. In the SDKI book, acute pain is classified under the psychological category and the pain and comfort subcategory. This diagnosis holds the primary priority among the diagnoses that appear because it is the most dominant and underlying health problem and the main reason the patient seeks medical help.

Nursing Intervention

Based on the established nursing diagnosis, the author formulated a nursing plan that conforms to the guidelines of the Indonesian Nursing Outcomes Standard (SLKI) and the Indonesian Nursing Intervention Standard (SIKI). Firstly, the author set the goal of the nursing intervention: after 3 days of action, the pain level is expected to decrease with the following outcome criteria: pain complaint decreased, grimacing decreased, protective behavior decreased, restlessness decreased, and difficulty sleeping decreased. The intervention formulated by the author was the implementation of a non-pharmacological technique, specifically applying a dry warm compress using a warm water bottle for a duration of 30 minutes over 3x24 hours.

Nursing planning aims to determine the care goals and intervention strategies to be implemented. Nursing planning is a very important stage as it forms the basis for providing systematic and targeted nursing care. For effective nursing planning, the established goals must meet the SMART principle (Ibrahim et al., 2025). Based on the data obtained from the determined diagnosis, the author formulated a nursing plan with the goal that after 3x24 hours of action, the pain level is expected to decrease, with outcome criteria including decreased pain complaint, decreased grimacing, decreased restlessness, and decreased protective behavior (Tim Pokja SLKI DPP PPNI, 2022).

The nursing plan formulated to address acute pain in gastritis patients is the dry warm compress. The dry warm compress is a non-pharmacological therapy that can be applied anywhere and does not take long. The author implemented the action for 3x24 hours. Based on the analysis, the author developed a nursing plan aiming for a decrease in pain level after 3 days of action. The nursing intervention given was the warm compress action, which included: Observation: Recognizing contraindications for warm compress, checking the condition of the skin to be compressed, ensuring the temperature of the compress tool, and monitoring for skin irritation or tissue damage during the first five minutes. Therapeutic: Choosing a comfortable and accessible compress method, determining the correct location for the compress, lining the compress tool with a protective cloth, performing the compress on the intended area, and avoiding application of the compress on tissue that has received radiation therapy. Education: Explaining the procedure for using the warm compress (Tim Pokja SIKI DPP PPNI, 2018).

Nursing Implementation

Based on the planned nursing actions, the author provided nursing care in the form of a dry warm compress using a warm water bottle for 30 minutes over 3x24 hours, while paying attention to the patient's comfort and safety level and carrying out the action according to the Standard Operational Procedure (SOP). Day 1 (Tuesday, February 18, 2025): The author performed the dry warm compress using a warm water bottle containing warm water at a temperature of 50o celsius for 30 minutes. After the warm compress, the patient felt relaxed

but was still grimacing, holding the painful area, moaning in pain, and complaining of difficulty sleeping. The patient stated the pain had decreased, showing a pain scale of 5 upon assessment.

Day 2 (Wednesday, February 19, 2025): The author performed the dry warm compress as on the first day for 30 minutes. The result obtained after the action was that the patient stated the pain was reduced when compressed and felt more comfortable, showing a pain scale of 4 upon assessment. The patient looked calmer, still appeared to be grimacing, was moaning in pain, holding the painful area, and had difficulty sleeping. Day 3 (Thursday, February 20, 2025): The author performed the dry warm compress nursing action for 30 minutes as on the previous days. After the action, the patient's response was that the patient said the pain was reduced and showed a pain scale of 3. The patient looked calmer, was not grimacing, not holding the painful area, not moaning in pain, and did not complain of difficulty sleeping.

Implementation is a series of actions carried out by the nurse to support the client and the health problem currently experienced, which aims for the desired outcome. This stage is a continuation of the planning phase, where the process is carried out according to the nursing action plan (Ibrahim et al., 2025). The actions taken by the author were consistent with the planned intervention, namely providing a dry warm compress for a duration of 30 minutes over 3 days. According to Wiji (2024), a warm compress is a technique to warm a specific area with fluid or a tool, helping to facilitate blood circulation, reduce pain, increase intestinal peristalsis, and make the patient feel comfortable. This therapy is also beneficial for lowering pain.

In this study, the researcher performed the dry warm compress using a warm water bottle (buli-buli), with the goal of reducing pain. According to Wicaksono (2019), warm compression is done by using a warm water bottle touching the skin. The heat from the water bottle transfers to the body, causing blood vessels to dilate. As a result, muscle tension decreases, which can reduce or even eliminate the pain experienced. This can also be linked to research by Abdurakhman et al. (2020), which explained that the use of a warm compress with a warm water bottle can lead to vasodilation (widening of blood vessels). This subsequently increases blood circulation to the tissue, which functions to deliver nutrients and oxygen to the cells. This process also aids in the removal of waste substances, thereby reducing pain.

The action of dry warm compress therapy applied to the respondent was carried out according to procedure and with caution. According to Taufiq (2019), a Standard Operational Procedure (SOP) is a set of rules used in carrying out actions as a guide to improve performance effectively, consistently, and structurally. Therefore, in this research, it supported the researcher in prioritizing patient safety and minimizing potential risks. The researcher began the warm compress action by reading the dry warm compress procedure.

The researcher applied the dry warm compress action to the respondent with the following steps: first, handwashing, positioning the patient, preparing the compress tool (filling the warm water bottle halfway with warm water that had been checked to be 50o celsius, then checking for air by placing the warm water bottle on a flat area, closing it tightly, checking the warm water bottle for any leaks, covering it with a cloth, and then placing the warm water bottle on the area to be compressed. This warm compress was performed for a duration of 30 minutes over 3 days. This can be linked to the explanation in the book by Sulisnadewi et al. (2023) that the dry warm compress procedure involves filling a warm water bottle with warm water at a temperature of 50-60o celsius and applying it for a duration of 30 minutes.

Nursing Evaluation

Based on the post-test questionnaire results using the Numeric Rating Scale (NRS) obtained after the dry warm compress nursing action, the patient stated the current pain level was at a pain scale of 3 (mild pain). The assessment results for the major signs and symptoms listed in the SDKI and supporting data according to the pain level criteria in the Indonesian Nursing Outcomes Standard (SLKI) were: pain complaint decreased, grimacing decreased, protective behavior decreased, restlessness decreased, pulse rate was normal, and complaint of difficulty sleeping decreased. It can be concluded that the evaluation in this case is that after the action was carried out for 3x24 hours, the pain level decreased, and the acute pain problem was partially resolved, due to the author's time limitation during the research, which restricted the implementation to only 3x24 hours.

The evaluation stage is a structured and planned way to compare the client's health condition with the established goals. This process involves the client and other health personnel. In the nursing context, evaluation is an activity aimed at assessing the nursing actions that have been performed. This is done to ensure the patient's needs are well met and to measure the outcomes of the nursing process (Rinawati, 2018).

The nursing evaluation results for Ms. H after the dry warm compress action for 3x24 hours showed that the pain complaint decreased to a pain scale of 3 (mild pain) using the NRS assessment, with criteria outcomes decreased. This evaluation result can also be related to the study conducted by Naqi'ah & Safitri (2024), which found that after the therapy was carried out for 3 days, patients stated that their abdominal pain decreased. Furthermore, it was also observed that the patient became more comfortable, and their pain scale decreased from 6 to 1. The research findings from Noldi (2024) also showed that the results of warm compress

implementation in patients with gastritis for three days indicated an evaluation that met expectations. The pain scale, which was initially at 5, decreased to 0, meaning no pain at all.

The evaluation results obtained from the post-test questionnaire for the major signs and symptoms of acute pain according to SDKI were as follows: decreased pain complaint, no grimacing, no holding of the painful area, no moaning in pain, normal pulse rate, and no complaint of difficulty sleeping. This data concludes that the pain level problem, based on the Indonesian Nursing Outcomes Standard, decreased. The conclusion of the evaluation in the case of Ms. H with the nursing problem of acute pain is partially resolved.

In this case, the use of a dry warm compress is known as a successful method in reducing the level of pain. This method involves the use of a warm water bottle, which works through the process of conduction, transferring heat from the warm water bottle to the body. Consequently, blood vessels dilate, reducing muscle tension. Additionally, this can also improve blood flow, aiding the movement of waste substances and nutrients. When blood vessels dilate, the blood circulation in that area improves (Wati, 2023). One of the advantages of this therapy is that it can distract attention from the pain, allowing the individual to relax and not focus on the pain (Noldi, 2024). The involvement of the patient and family was also a supporting factor in the nursing process, providing good cooperation so that the research could proceed smoothly without obstacles.

Conclusion and Suggestion

The conclusions obtained after managing acute pain in Ms. H using a dry warm compress for gastritis in the Panuluh room at Pandan Arang General Hospital of Boyolali are as follows: Nursing Assessment: The result of the NRS (Numeric Rating Scale) pain assessment showed the patient reported pain at a scale of 6, categorized as moderate pain. The assessment of major pain signs and symptoms (modified SDKI) showed the patient appeared to be grimacing, appeared to be holding the painful area, moaning in pain, and complained of difficulty sleeping. Nursing Diagnosis: The established nursing diagnosis was acute pain related to a physiological injurious agent. The major defining characteristics found were 100% of the signs, namely the expression of discomfort obtained from subjective data (the respondent complained of pain), and objective data (the respondent appeared grimacing, holding the painful area, moaning in pain, and complaining of difficulty sleeping). Intervention: The intervention implemented was a non-pharmacological action with dry warm compress therapy using a warm water bottle. Implementation: The implementation carried out to manage acute pain was the dry warm compress with a warm water bottle for a duration of 30 minutes over 3 days. The dry warm compress aims to reduce pain intensity and serve as a distraction from the pain. This therapy can provide a better effect if the patient previously experienced severe pain, supporting good rest to help alleviate pain and accelerate the recovery process. Evaluation: The evaluation for the nursing diagnosis of acute pain related to a physiological injurious agent showed the problem was partially resolved. This was indicated by the patient stating the pain had decreased to a pain scale of 3 (mild pain), and objective data showing the patient was not grimacing, not holding the painful area, not moaning in pain, had a normal pulse rate, and had no complaint of difficulty sleeping.

Suggestion to the public should receive quality health services and gain knowledge about applying nursing interventions, such as the provision of dry warm compress to gastritis patients.

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