

Effect Of Red Ginger Compress To Decrease Scale Of Pain Gout Arthritis Patients

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ABSTRACT: Gout arthritis is the build up of uric acid in the joints causing pain manifestations. In addition to pharmacological treatment that is, non-pharmacological treatment is necessary also to pain, using red ginger compress. This research aimed to determine the effect of red ginger compress to decrease the patient's pain scale of uric acid. The research design uses a quasi-experimental approach non randomized control group pretest-posttest design. The sampling used total sampling in order to extract some 24 elderly respondents who suffer from gout in Elderly hospice Mojopahit Mojokerto. Data of this research were taken from the checklist and observation sheets pain scale before and after the administration of red ginger compress. Analysis of data used statistical test two independent samples t test. The results showed a pain scale of respondents in the treatment group were on a scale of 4-6 and 7-9, and after being given the scale of the intervention to the scale of 1-3 and 4-6 scale, whereas the control group did not experience a decrease in pain scale. Statistical test results 2 independent samples t test obtained p value 0.029 ($p < 0.05$). So H_0 is rejected, which means there is the effect of red ginger compress to decrease the patient's pain scale of uric acid. Red ginger compress for gout sufferers who are experiencing pain, decrease pain scale effect on the how to help lower levels of prostaglandins and leukotriene (inflammatory mediators) and performed regularly 1 times a day for 15-30 minutes.

Keywords: Gout Arthritis, Pain, Red Ginger Compress

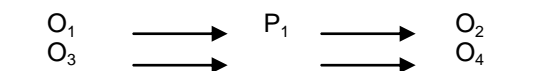
Introduction

Uric acid is formed from the breakdown of purines chemical substance derived from the genetic material of cells. Normally uric acid excreted in the urine. If there is an excess of uric acid produced, can accumulate and form small crystals in joints and elsewhere. If these crystals into the joint space, then there inflammation, swelling, and severe [1]. In addition to pharmacological treatment is, also required non-pharmacological treatment of pain, or more commonly known as pain management is an action to reduce pain [2]. Susenas 2014 showed that more than 50 percent of the elderly population experiencing health complaints in the last month. By sex, the percentage of elderly population of women who experience health complaints in the last month was higher than men. If seen from 2012 to 2014, the percentage of elderly population who experience health complaints in the last month are likely to fluctuate. The percentage of elderly residents who have health complaints in the past month decreased from 51.94 percent in 2012 to 50.93 percent in 2013. This percentage then rose to 52.67 percent in 2014. According to Susenas 2012, about the kind of health complaints elderly the highest (32.99%) is the type of complaints including complaints that the effects of chronic diseases such as gout, high blood pressure, arthritis, low blood, and diabetes mellitus [3]. The prevalence of joint disease diagnosis based health workers in Indonesia 11.9 per cent and symptom-based diagnosis or 24.7 per cent [4]. East Java Health Office said, in 2013 elderly patients with uric acid in East Java as many as 4,027 people. Meanwhile, Mojokerto District Health Office said elderly patients with gout in 2013 as many as 461 elderly men and 493 women out of 296 910 elderly Mojokerto [3].

Meanwhile, based on preliminary studies conducted on December 5, 2015 in Elderly hospice Mojopahit Mojokerto found that elderly people who suffer from gout and joint pain complained of as many as 25 people. With details of 8 people experience severe pain, 12 people suffered moderate pain and 5 people experience mild pain. Uric acid disorder characterized by a sudden attack on the hinge joint area. Pain that do occur tend to appear suddenly. The sudden emergence of this often causes gout sufferers have difficulty moving. When you wake up, for example, the big toe and the ankle will feel burning, pain and swelling [5]. Elderly who have early stages of uric acid, which is characterized by symptoms do not often, traditional medicine to help relieve of pain in patients with uric acid is the best choice. In addition to diet, traditional medicine can also be done by giving a red ginger compress on the affected part. Because the red ginger essential oil content and has several compounds, including gingerol, shogaol and zingeron provide pharmacological and physiological activity such as antioxidant effect, antiinflammasi, analgesic, anticarcinogenic and cardiotoxic [6].

Method

The research design used in this study is a quasi-experimental design approach Non-Randomized Control group pretest-posttest design. A draft design that aims to reveal the differences of the two types of intervention or treatment that involves two experimental groups. In the two groups before the administration begins with observation of the intervention (pretest), and observation after the intervention (posttest). This design can be described as follows.



Information:

O1 and O3: Observation Scale given Pain Before treatment

P1: Treatment using red ginger compress

O2: Observation scale of pain after a given treatment

O4: Observations on the pain scale control group

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In this study, the authors explain the effect of red ginger compress against scaling back pain in patients with gout in Elderly hospice Mojopahit Mojokerto regency. Determination of the population of this research was conducted in December 2015, the whole of the elderly in Elderly hospice Mojopahit Mojokerto who experience gout and hinge pain as much as 24 respondents. Researchers took samples using non-probability sampling technique "total sampling". Where all members of the population

sampled, this method is used when the population of a small relative [7]. Analysis of the data in this study using computer program SPSS for Windows version 16.0 using 2 independent samples t test (Independent samples t test), with a significance level of $p < 0.05$.

Result And Discussion

1. Characteristics of respondents by age

Table 1.1 shows the frequency distribution of respondents by age patients Uric Acid in Elderly hospice Mojopahit Mojokerto dated March 12, 2016.

No	Age	Treatment group		Control group	
		F	%	F	%
1	45-59	2	16,7	2	16,7
2	60-74	8	66,7	10	83,3
3.	75-90	2	16,7	0	0
Total		12	100	12	100

On differences Table 1.1 shows that most respondents aged 60-74 years namely between 8 respondents (66.7%)

in treatment group and 10 respondents (83.3%) on Control group.

2. Characteristics of respondents by Gender

Table 1.2 Distribution of the frequency of respondents by sex sufferers Uric Acid in Elderly hospice Mojopahit Mojokerto dated March 12, 2016.

No	Sex	Treatment Group		Control group	
		F	%	F	%
1.	Men	2	16,7	6	50,0
2.	women	10	83,3	6	50,0
Total		12	100	12	100

In Table 1.2 above shows that most respondents in the treatment group were female as much as 10 respondents

(83.3%) and in the control group sex between men and women alike.

3. Characteristics of respondents based on the pain scale pretest

Table 1.3 Distribution of respondents by the pain scale gout patients on before the red ginger compress in Elderly hospice Mojopahit Mojokerto dated March 12, 2016

NO	Pain Scale	Treatment group		Control group	
		F	(%)	F	(%)
1.	Scale 0	0	0	0	0
2.	Scale 1-3	0	0	5	41,7
3.	Scale 4-6	6	50,0	5	41,7
4.	Scale 7-9	6	50,0	2	16,7
5.	Scale 10	0	0	0	0
Total		12	100	12	100

In Table 1.3 above shows that in the treatment group of respondents who had a pain scale of 4-6 and 7-9 percentage is the same pain scale, whereas the control

group had a small part as much pain scale 7-9 2 respondents (16.7%).

4. Characteristics of respondents based on the pain scale posttest

Table 1.4 Distribution of respondents based on the scale of pain sufferers performed after red ginger compress in Elderly hospice Mojopahit Mojokerto dated March 12, 2016

NO	Pain Scale	Treatment group		Control group	
		F	%	F	%
1.	Scale 0	0	0	0	0
2.	Scale 1-3	2	16,7	5	41,7
3.	Scale 4-6	10	83,3	5	41,7
4.	Scale 7-9	0	0	2	16,7
5.	Scale 10	0	0	0	0
total		12	100	12	100

In Table 4.4 above shows that most respondents in the treatment group had a pain scale of 4-6 as many as 10 respondents (83.3%), while the control group of

respondents who have a pain scale of 1-3 and 4-6 pain scale percentage is the same

5. Effect of Red Ginger Compress to Decrease Pain Scale Gout Patients.

Table 4.5 Effect of Red Ginger Compress Scale Decline against Pain Patients Uric Acid in Elderly hospice Mojopahit Mojokerto dated March 12, 2016

Pain Scale	Treatment group		Control group	
	F	%	F	%
Scale 0	0	0	0	0
Scale 1-3	2	16,7	5	41,7
Scale 4-6	10	83,3	5	41,7
Scale 7-9	0	0	2	16,7
Scale 10	0	0	0	0
Total	12	100	12	100

independent samples T test p = 0,029

Statistical test results by using independent samples t test 2 (independent samples t test) obtained significance value of $p = 0.029$ and smaller than at $\alpha = 0.05$, which showed no significant difference, and it can be said red ginger compress effectively to decrease pain scale.

Discussion

This chapter describes the discussions that include interpretation and discussion of the results of such research has been described in the previous chapter. This study aimed to determine the effect of red ginger compress to decrease the patient's pain scale of uric acid. In gout pain sufferers distribution based on the pain scale before red ginger compress The results in Table 4.3 show that the treatment group of respondents who had a pain scale of 4-6 and 7-9 percentage is the same pain scale, whereas the control group had a pain scale fraction 7-9 by 2 respondents (16.7%). This is due to various factors that cause gout so that a patient can experience pain. Of the general data obtained during research found some conclusions can be explained that the respondent experienced pain due to abnormal levels of uric acid in the

blood. This is because the levels of uric acid in the blood exceeds the normal threshold, uric acid will not dissolve back into the blood. In the end, it will settle into uric crystals and into the organs of the body, especially in the joints. These uric crystals was taken as a foreign object by body. The trigger immune cells (immune cells) to force it. The emergence of immune cells would cause inflammation or an inflammatory reaction which causes swelling redness and pain [8]. The active ingredients of ginger (gingerols and shogaols) have a molecular weight of 150 to 190 Da, a lipophilicity log P range 3.5, and moderate solubility in water and oil, which allows good potential for skin penetration. a gingerol extract on a plaster was absorbed transdermally through human epidermis as well as having an effective anti-inflammatory response on mouse skin. Mingetti et al. conclude there would likely be an anti-inflammatory effect with the transdermal delivery of ginger [9]. Distribution of patients with pain after being given a red ginger compress In gout pain sufferers distribution based on the pain scale before red ginger compress The results in Table 4.4 show that the majority of respondents in the treatment group had a pain scale of 4-6 as many as 10 respondents (83.3%) ,

while the control group of respondents who have a pain scale of 1-3 and 4-6 pain scale the same percentage. That is because the pain is always associated with the stimulus (stimulus pains) and the receptor. The receptor in question is nociceptors, the nerve endings in the skin that is free to respond to a strong stimulus. The emergence of pain begins with a painful stimulus. The stimuli may be biological, chemical, thermal, electrical and mechanical [10]. Pain stimuli is referred to here is the stimulation of pain due to inflammation caused increased levels of uric acid in the blood. Pain is felt everyone could be different due to various factors. Results of analysis of 2 independent samples t test (independent samples t test) result ($p = 0.029 < \alpha = 0.05$) then H_0 rejected and H_1 accepted which means no effect of red ginger compress to decrease the patient's pain scale of uric acid in UPT Elderly hospice Mojopahit Mojokerto regency. Table 4.3 Shows that of the 12 respondents who get red ginger compress intervention, before being given interventions that decrease pain scale up to as much as 2 1-3 pain scale of respondents (16.7%) and decreased up to as much as 4-6 pain scale 10 respondents (83.3%), and 12 respondents who did not receive the intervention compress red ginger is not decreased pain scale. The above data show that people who experience joint pain after being given a red ginger compress intervention pain scale decreased significantly. This is because the content of essential oils in dried red ginger approximately 2.58 to 3.90%. The main component of red ginger essential oil that causes the fragrance is zingiberen and zingiberol. Red ginger oleoresin contains many components - the nonvolatile component having a higher boiling point than the volatile components of essential oils. In the pharmaceutical industry essential oil is used as an anti-pain, anti-infective, and bacteria killer [11]. Topical ginger application is a traditional approach (Chen et al., 2010; Yang et al., 2012) that has been found in anthropomorphic hospitals to be effective for a wide range of inflammatory conditions when applied over the kidney region (Fingado, 2012; Schurholz et al., 2002). People with OA manifest complex symptoms and often have complex comorbidities (Lane et al., 2011). Management of OA needs to encompass a holistic approach that treats pain on movement as well as fatigue, tiredness, anxiety, and global effect. Ginger therapy achieved this for Peter, with no reported negative side effects [12]. Aromatic ginger oil was added to Swedish massage (SMGO) and was found to be more effective than TTM for back pain reduction in the short- and long-term. It seems that the addition of aromatic ginger oil enhanced the benefit of Swedish massage to make it more effective than TTM in reducing low back pain. Previous studies of the use of aromatic ginger in treating musculoskeletal pain, including knee pain, and muscle pain, reported that ginger produced moderate-to-large reductions in pain. The findings of the current research agree with those showing the analgesic effects of ginger in musculoskeletal-pain of patients [13]. So far, the pharmacological results showed that the red ginger has several activities as an anti-inflammatory. When there is pain chemicals that increase transmission or perception of pain include histamine, bradykinin, acetylcholine and substance P. Prostaglandins are chemicals that can increase the sensitivity of pain receptors by enhancing the effects of bradykinin that causes pain. On the other hand,

the body also releases endorphins and enkephalin. These substances function as inhibitors of the pain transmission. Examples of pain transmission through the fiber C is painful injury and inflammatory pain. In inflammatory conditions, would increase spending inflammatory mediators such as proinflammatory cytokines, chemokines, which may increase the sensitivity of nociceptor thereby decreasing pain threshold so that there was pain. Examples of inflammatory mediators are stimulated as a result of the infection among prostaglandin, leukotrienes, bradykinin stimulated the inflammatory pain [2]. Laboratory tests showed that the red ginger extract in hot water membrane inhibited lipoxygenase and cyclooxygenase activity resulting in lower levels of prostaglandins and leukotriene (inflammatory mediators) (Setiawan, 2015). Ginger Topical treatment has the potential to relieve symptoms, improve the overall health, and increase of independence of people with chronic osteoarthritis [9]. Red Ginger has anti-inflammatory effects that can be used to treat the inflammation and relieve pain caused by gout. The anti-inflammatory effect is due to the active component consisting of a red ginger gingerol, gingerdione, and zingeron which serves to inhibit leukotrienes and prostaglandins which are inflammatory mediators [14].

Conclusion and suggestion

Conclusion

1. The scale of the patient's pain uric acid prior to compress red ginger in Elderly Nursing Unit Mojopahit Mojokerto district have an average pain scale of 4-6.
2. Scale pain gout patients after red ginger compress in Elderly Nursing Unit Mojopahit Mojokerto district showed a decrease in pain significant scale.
3. There is the influence of red ginger compress to decrease the patient's pain scale of uric acid in Elderly Nursing Unit Mojopahit Mojokerto and the results of independent samples t test 2 (independent samples t test) shows the result $p = 0.029 < \alpha = 0.05$.

Suggestion

1. For respondents with pain caused by gout should use red ginger compress every morning regularly to help relieve the pain experienced scale. For those respondents who had uric acid levels were very high preferably assisted with taking the drug for gout in order to help lower uric acid levels, besides the respondents also should control his diet.
2. For health workers to be able to use the red ginger therapy to treat the patients pain caused by uric acid so painful case of gout can be decreased. It is also desirable in order to introduce the benefits of red ginger so much you can take advantage of red ginger to health and can benefit optimally.
3. For the next researcher to pay more attention to the dose of red ginger compress for each respondent so that the results can among respondents with each other the same.

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