

PAIN, HYPERURICEMIA (Uric Acid), AND ELDERLY INSOMNIA

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ABSTRACT

Hyperuricemia is a result of normal metabolism from the digestion of proteins from the decomposition of purine compounds which should be removed through the kidneys, feces, sweat and urine. The accumulation of too much purine substances causes pain that occurs a lot in the age above 45 years, namely the elderly. Elderly who experience Hyperuricemia is one sign of symptoms is pain. Pain can cause elderly people who have difficulty sleeping or insomnia. Purpose of the study Analyze the relationship of pain with insomnia in elderly patients with Hyperuricemia. The design of the analytical study of correlation with the Cross Sectional approach. The population is all Hyperuricemia sufferers in the elderly in Ledok Area, Sukorejo Village, Malo District, Bojonegoro Regency using total sampling technique. Data were collected using questionnaire sheets with measuring instruments Numeral Rating Scale (NRS) and Pittsburgh Sleep Quality Index (PSQI) Questionnaire, to determine the relationship of pain with insomnia in elderly patients with Hyperuricemia. The analysis uses the Pierson test with a significance level of $\alpha < 0.05$. Nearly half of respondents aged 55-64 years experienced insomnia with poor sleep quality as many as 13 respondents (43.3%) experienced by female respondents as many as 12 respondents (40%) and 1 male respondent (0.3%) and some women who have a value of Hyperuricemia levels of 6-7 mg / dL with a moderate pain scale of 14 respondents (46.7%). The results of this study were that there was a relationship between pain and insomnia in elderly patients with Hyperuricemia with the results of the Pearson test obtained sig. 2 p = 0,000 $< \alpha < 0,05$.

Keywords: Pain, Insomnia, Elderly, Hyperuricemia.

INTRODUCTION

Hyperuricemia is the result of normal metabolism from digestion of protein from the decomposition of purine compounds (damaged body cells) which should be removed through the kidneys, stool / sweat. Naturally, the urine is found in the human body and is found in all foods in living cells, namely foods from vegetables, fruits, nuts and animal origin ⁽¹⁾. Hyperuricemia levels that are above the normal threshold can cause pain and severe pain in the joint area. Pain is a subjective sensation, an uncomfortable feeling usually associated with actual or potential tissue damage ⁽²⁾. Pain and severe pain in patients with Hyperuricemia are more common at night, this makes patients with

Hyperuricemia often wake up from sleep and have an impact on the poor quality and quantity of sleep sufferers so that they experience insomnia ⁽³⁾. Insomnia is the most common disorder in adult individuals, namely, the inability to sleep based on the quality and quantity of sleep ⁽⁴⁾. The incidence of Hyperuricemia prevalence in 2008 reported by the World Health Organization reached 20% of the world's population Hyperuricemia, where 5 to 10% are those aged 5 to 20 years and 20% are those aged 55 years. In 2015 Indonesia was ranked 4th in the world which suffered the most from urate. Hyperuricemia in Indonesia is known to affect around 35% of men over 34 years. Based on the BPS data center in East Java Province, Hyperuricemia is one of the most common diseases suffered

by the elderly, namely in 2007 as many as 28% of 4,209,817 elderly suffer from Hyperuricemia ⁽⁵⁾. The incidence of Hyperuricemia in the village of Sukorejo, Malo Subdistrict, Bojonegoro Regency was 34% with the number of elderly 91 people. The village of Sukorejo had an estimated 41 inhabitants, the area had an elderly population of 30 people and the Kidangan village had 20 elderly people. While the prevalence of insomnia according to WHO (World Health Organization) in 2011 the world population experienced insomnia as much as 30-45% ⁽⁶⁾. In 2004 Indonesia's population of 234.452 million as many as 28.053 million Indonesians who experienced insomnia or around 11.7% ⁽⁷⁾. In East Java, the incidence of elderly insomnia in 2009 reached around 10% of the number of elderly people in East Java ⁽⁸⁾. Based on the results of the preliminary study with the interview method to 12 elderly people in Ledok Area, Sukorejo Village, Malo District, Bojonegoro District, 10 elderly felt pain in the joints at night. This makes it difficult for them to start or maintain sleep / insomnia.

Factors that influence the occurrence of Hyperuricemia include genetic factors, gender, age, obesity, and consumption of high purines and alcohol. Hyperuricemia is a factor that increases the risk of kidney failure. Looking at the complex problem of Hyperuricemia, it can be concluded that if no treatment and control of Hyperuricemia is carried out it can cause complications in the body ⁽⁹⁾. The cause of Hyperuricemia can also be seen from advanced age (further 60 years), menopause, metabolic disease, joint injury, physical stress, inflammation of the joints, deposits in joint prone, or solid bone ⁽¹⁰⁾. Hyperuricemia can also be seen with symptoms or signs such as joint pain, stiffness in joints, heat in joints, swelling in the joints, and redness in joints (Gordon, 2014). The level of Hyperuricemia above the normal level is one of the symptoms that arises in the joints. In addition to pain in the joints it also has a variety of other effects including sleep disorders / insomnia ⁽¹¹⁾.

Treatment of Hyperuricemia can be done by pharmacology and non-pharmacology.

However, pharmacological treatment is certainly not very effective during the treatment of Hyperuricemia, therefore treating Hyperuricemia in addition to treatment therapy must also be done with non-pharmacological therapies such as healthy diets and exercise, so that Hyperuricemia treatment can be more effective ⁽¹²⁾. Treatment of Hyperuricemia can also use complementary treatments such as herbal therapy, nutritional therapy, progressive relaxation, acupuncture, acupressure, cupping ⁽¹³⁾. In patients with Hyperuricemia, joint pain occurs which can cause insomnia or insomnia in the elderly. Insomnia is the inability to adequately sleep both the quality and quantity of sleep ⁽¹⁴⁾. Based on the description above, the researcher was interested in conducting a study whether there was a relationship between pain and insomnia in elderly patients with Hyperuricemia in Ledok Area, Sukorejo Village, Malo District, Bojonegoro Regency.

Pain is defined as a condition that affects a person and his existence is known if someone has experienced it ⁽¹⁵⁾. According to the International Association for Study of Pain (IASP), pain is the experience of unpleasant emotional feelings due to actual or potential damage, or describes the condition of damage.

Insomnia is difficulty sleeping, sleep is not calm, difficulty holding back sleep and often wakes up early. Insomnia is the most common disorder in adult individuals, namely, the inability to sleep based on the quality and quantity of sleep ⁽⁴⁾.

RESEARCH METHOD

In this study the author uses the Cross Sectional Research Design, where the researcher observes or observes variables through giving a questionnaire about variable 1 and variable 2 data at almost the same time. The population is elderly who suffer from Hyperuricemia in Ledok Area, Sukorejo Village, Malo District, Bojonegoro Regency, as many as 30 elderly. This sampling uses nonprobability sampling with purposive sampling technique

RESULT

Characteristics of Respondents Based on Special Data on Pain in the Elderly Hyperuricemia Patients

Table 1 Frequency distribution of respondents based on pain in elderly patients with Hyperuricemia in Ledok area, Sukorejo Village, Malo District, Bojonegoro District.

No	Pain scale	frequency	Percentage (%)
1	No pain (0)	0	0
2	Mild pain (1-3)	8	26,7
3	Moderate pain (4-7)	18	60
4	Severe pain (8-10)	4	13,3
Total		30	100

Based on table 1, most elderly people with Hyperuricemia sufferers experience moderate pain with a 4-7 pain scale of 18 people (60%).

Table 2 Characteristics of respondents based on pain with Hyperuricemia levels in Ledok Area Sukrejo Village, Malo District, Bojonegoro Regency

Pain	Hyperuricemia												Total	
	Gender													
	Male						Female							
	8-10 mg/dL		6-7 mg/dL		4-5 mg/dL		8-10 mg/dL		6-7 mg/dL		4-5 mg/dL			
	f	%	f	%	f	%	f	%	F	%	f	%	f	%
mild (1-3)	0	0	0	0	7	23,3	1	3,3	0	0	0	0	8	26,6
moderate (4-7)	0	0	4	13,3	0	0	0	0	14	46,7	0	0	18	60
Severe (8-10)	0	0	0	0	0	0	4	13,3	0	0	0	0	4	13,3
Total	0	0	4	13,3	7	23,3	5	16,6	14	46,7	0	0	30	100

Based on table 2, the distribution of respondents with pain with Hyperuricemia levels showed that the majority of women who had a Hyperuricemia value of 6-7 mg / dL with a moderate pain scale of 14 respondents (46.7%) and women who had a Hyperuricemia value 8-10mg / dL as many as 4 respondents (13.3%). Based on male sex which has a value of 4-5mg / dL

Hyperuricemia which experienced mild pain as many as 7 respondents (23.3%)

Characteristics of Respondents Based on Insomnia in Elderly People with Hyperuricemia

Table 3 Frequency distribution of respondents based on insomnia in elderly patients with Hyperuricemia in Ledok Area, Sukorejo Village, Malo District, Bojonegoro Regency.

No	sleep	Frequency	Percentage (%)
1	Good	11	36,7
2	Bad	19	63,3
Total		30	100

Based on table 3, most elderly people with Hyperuricemia sufferers experienced poor quality of sleep as many as 19 people (63.3%).

Table 4 Frequency distribution of respondents based on age and sex with insomnia in Ledok Area, Sukorejo Village, Malo District, Bojonegoro Regency

Age	Insomnia															
	Age		Total		Gender											
					Male				Female				Total			
	Good		Bad		Good		Bad		Good		Bad					
	f	%	f	%	f	%	f	%	f	%	f	%	f	%		
45-54 years	7	23,3	0	0	7	23,3	7	23,3	0	0	0	0	0	0	7	23,3
55-64 years	4	13,3	1	43,3	1	56,7	3	10	1	0,3	1	0,3	1	4	1	56,3
65-74 years	0	0	6	20	6	20	0	0	0	0	0	0	6	2	6	20
Total	11	36,6	19	63,3	30	100	11	36,6	19	63,3	11	36,6	19	63,3	30	100

Test of Spearman Signed Rank: sig. p = 0,01 ($\alpha < 0,05$)

Based on table 4, the results of age 55-64 years experienced insomnia with poor

sleep quality as many as 13 respondents (43.3%) experienced by female respondents as many as 12 respondents (40%) and 1 male respondent (0.3%), age 45-54 years have good sleep quality as many as 7 respondents (23.3%) experienced by male respondents.

Relationship between Pain and Insomnia in Elderly People with Hyperuricemia

Table 5 Distribution of Spearman statistical tests Respondents in relation to pain with insomnia in elderly patients with Hyperuricemia in Ledok Area, Sukorejo Village, Malo District, Bojonegoro District

		Correlations	
		Pain	Insomnia
Spearman's rho	Correlation Coefficient	1.000	.750**
	Sig. (2-tailed)	.	.000
	N	30	30
	insomnia		
insomnia	Correlation Coefficient	.750**	1.000
	Sig. (2-tailed)	.000	.
	N	30	30

** . Correlation is significant at the 0.01 level (2-tailed).

Based on table 5, it can be obtained that N or the amount of research data are 30 respondents, then the sign value. (2-tailed) is 0,000, as in the decision-making dassar above, it can be concluded that there is a significant relationship between pain and insomnia in elderly patients with gout in Ledok Hamlet, Sukorejo Village, Malo District, Bojonegoro Regency.

DISCUSSION

Based on the results of the study showed that the majority of elderly people with Hyperuricemia experienced poor quality of sleep as many as 19 people (63.3%). Based

on table 4, the results of age 55-64 years experienced insomnia with poor sleep quality as many as 13 respondents (43.3%) experienced by female respondents as many as 12 respondents (40%) and 1 male respondent (0.3%), age 45-54 years have good sleep quality as many as 7 respondents (23.3%) experienced by male respondents. Insomnia is the most common disorder in adult individuals, namely, the inability to sleep based on the quality and quantity of sleep⁽⁴⁾. Sleep difficulties often occur, both at a young age or old age, and often arise with emotional disorders, such as anxiety, anxiety, depression or fear. Sometimes someone has difficulty sleeping just because the body and brain are not tired⁽¹⁹⁾.

Based on table 5, it can be obtained that N or the amount of research data are 30 respondents, then the sign value. (2-tailed) is 0,000 because $\alpha < 0.05$, there is a significant relationship between pain and insomnia in elderly patients with Hyperuricemia in Ledok Area, Sukorejo Village, Malo Sub-District, Bojonegoro District ..

The International Association for the Study of Pain (16), defines pain as an uncomfortable sensory and emotional experience associated with actual and potential tissue damage. These uncomfortable feelings are very subjective and only people who experience them can explain and evaluate these feelings⁽²⁰⁾. Pain that is felt if it is not cured will be a priority of the mind which eventually clogged up depression, because of depression there will be insomnia. Insomnia is the most common disorder in adult individuals, namely, the inability to sleep based on the quality and quantity of sleep⁽⁴⁾. In the elderly who experience Hyperuricemia it will be difficult to start sleeping. Because the elderly are someone who is due to his age experiencing biological and physical and psychological and social changes. Aging (becoming old) is a process of slowly disappearing the ability of tissues to repair themselves / replace and maintain their normal functions so they cannot survive infection and repair the damage suffered⁽²¹⁾

From the results of the study, it can be found that there is a relationship between pain caused by Hyperuricemia with the results of the Spearman statistical test, which states that elderly people with Hyperuricemia will experience pain which will affect the sleep quality of respondents. Of the 30 respondents 19 respondents experienced poor sleep quality because the levels of purine substances in the body increased which caused Hyperuricemia which caused pain in the joints. The higher the value of purine substances in the body, the scale of pain will be high so that the quality of sleep is poor.

CONCLUSION

Based on the discussion about the relationship of pain with insomnia in elderly people with Hyperuricemia sufferers it can be concluded that:

1. Most women who have a Hyperuricemia value of 6-7 mg / dL with a moderate pain scale of 14 respondents (46.7%) and women who have a Hyperuricemia value of 8-10 mg / dL as many as 4 respondents (13.3%) . Based on male sex which has a value of 4-5mg / dL Hyperuricemia which experienced mild pain as many as 7 respondents (23.3%)
2. Most ages 55-64 years experience insomnia with poor sleep quality as many as 13 respondents (43.3%) experienced by female respondents as many as 12 respondents (40%) and 1 male respondent (0.3%), age 45-54 years have good sleep quality as many as 7 respondents (23.3%) experienced by male respondents ..
3. Spearman's statistical test results can be obtained that N or the amount of research data are 30 respondents, then the sign value. (2-tailed) is 0,000 <0,05, it can be concluded that there is a significant relationship between pain and insomnia in elderly patients with Hyperuricemia in Ledok Area, Sukorejo Village, Malo District, Bojonegoro Regency.

CONFLICT OF INTEREST

The author of this study was entirely supported by the college and there was no any financial concern between the

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ETHICAL CLEARANCE

Ethical clearance is not applicable for this study as it is a narrative review.

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