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IMPACT OF EATING PATTERNS ON URIC ACID LEVELS IN THE ELDERLY

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ABSTRACT

The elderly as a population are at risk of having problems with decreasing body physiology, one of which is uric acid metabolism. One of the factors that influence an increase in uric acid levels is poor diet, namely foods with excessive purine content. The aim of this research is to determine the relationship between diet and uric acid levels in the elderly. The research design used is descriptive analytical research using a cross-sectional research approach. The population in this study were elderly posyandu participants in the working area of the Kedundung Community Health Center, Mojokerto City. Sampling used the "accidental sampling" technique. The results of bivariate correlation analysis using the Spearman's rho test showed that the p value = 0.000. This means that there is a relationship between diet and uric acid levels in the elderly. A bad diet that can cause high uric acid levels is food with a high purine content.

Keywords

Eating Patterns, Uric Acid, Elderly

INTRODUCTION

Health problems in humans often occur in certain age groups, one of which is the elderly. As a person ages, there will be changes in the anatomical structure and physiology of the body. This is because the ability of cells and tissues decreases in regeneration and metabolic activity, resulting in a decrease in organ function (Suntara et al., 2022).

Some elderly people as a population at risk have three health risk characteristics, namely, biological risks including age-related risks, social and environmental risks and behavioral or lifestyle risks. (Nikmah & Khomsatun, 2020). A diet high in purine and lack of activity are things that are often experienced by the elderly. This will result in an increase in uric acid levels (Gout) and if not controlled properly, it can lead to complications of further organ disorders.

WHO states that arthritis sufferers in Indonesia reach 81% of the population, only 24% go to the doctor while 71% tend to immediately take over-the-counter pain relievers. This figure places Indonesia as the country with the highest incidence of arthritis when compared with other Asian countries, such as Hong Kong, Singapore, Malaysia and Taiwan. The prevalence of joint disease based on health workers' diagnosis is highest in Bali (19.3%) followed by Aceh (18.3%), West Java (17.5%) and Papua (15.4%)3. From time to time the number of gout sufferers tends to

increase. The national prevalence of joint disease is 30.3%(Arjani, 2018).

Elderly people often experience disorders caused by the aging process, including blood circulation disorders (hypertension, blood vessel disorders, blood vessel disorders in the brain and kidneys), joint disorders (osteoarthritis, gout), and various neoplastic diseases. Almost 8% of people aged 50 years and over have joint complaints, for example rheumatic pain, aches and sometimes pain. Everyone suffers from gout. This is caused by 3 trigger factors, namely genetic, hormonal factors and due to poor eating patterns such as frequently consuming foods that contain high purines, for example meat, crab, offal and nuts (Dewi & Ardani, 2013).

Based on preliminary study data conducted by researchers, it is known that the Kedundung Community Health Center is a community health center in the working area of Mojokerto City which has a fairly high elderly population. To provide optimal service to the community. Kedudung Community Health Center carries out posyandu activities for the elderly in 25 places. The results of interviews with elderly posyandu cadres revealed that several elderly people experienced increased uric acid levels. So researchers are interested in conducting an analysis of "The Relationship between Diet and Uric Acid Levels in the Elderly".

METHOD

Research design used is an analytical descriptive research with using a research approach cross-sectional, the independent variable is eating pattern and the dependent variable is uric acid levels which are measured simultaneously. The population in this study were elderly posyandu participants in the working area of the Kedundung Community Health Center, Mojokerto City. Sampling used the "accidental sampling" technique. The statistical test carried out was univariate analysis in the form of respondent characteristic data consisting of age, gender and education level. Univariate analysis of the two variables, namely diet and uric acid levels. Meanwhile, bivariate correlation analysis uses the Spearman's rho test.

RESULTS

Table 1. Respondents' Frequency Distribution Based on Age, Education, and Gender

No	Characteristics	Number of Respondents	%
1	Age		
	Midle Age (45-59)	10	25
	Elderly (60-74)	29	72,5
	Old (75-90)	1	2.5
2	Gender		
	Male	5	12,5
	Female	35	87,5
h3	Education		
	elementary school	2	5
	Junior high school	23	57,5
	Senior High School	15	37,5
	Total	40	100

Based on the data collection contained in Table 1. It is known that the majority of respondents were in the Elderly age range, 29 (72.5%). Most of the respondents' gender was female, 35 (87.5%). The education level of most of the respondents was junior high school, 23 (57.5%).

Table 2Frequency Distribution of Eating Patterns

No.	Eating Patterns	Number of Respondents	%
1.	Good	16	40
2.	Worst	24	60
	Total	40	100

Based on table 2, it is known that the majority of respondents have worst eating patterns, 24 (60%).

Table 3. Frequency Distribution of Respondents based on Uric Acid Levels

No.	Uric Acid Level	Number of Respondents	%
1.	Normal	16	40
2.	Abnormal	24	60
	Jumlah	40	100

Based on table 3, it is known that the majority of respondents had uric acid levels in the abnormal category, 24 (60%).

Table 4. Relationship between Diet and Uric Acid Levels

Based on table 4, it is known that 15 respondents (37.5%) have a good diet with normal uric acid levels. A total of 23 respondents (57.5%) had poor eating patterns with abnormal uric acid levels. The results of the Spearman's rho test analysis show a p value of 0.000.

No	Pola makan	Uric Acid Levels				Total	
		Normal		Abnormal			
		f	%	*f*	%	*f*	%
1.	Good	15	37,5	1	2,5	16	40
2.	Worst	1	2,5	23	57,5	24	60
	Total					40	100
	P Value		0,000				

DISCUSSION

Uric Acid Levels

The research results that we can see in table 2 show that the majority of respondents had abnormal uric acid levels, 24 (60%). Hyperuresemia is a condition that occurs due to high levels of uric acid in the blood that exceed the normal threshold value. Hyperuresemia occurs due to disturbances in metabolic processes in the formation of uric acid in the body and due to decreased excretion of uric acid.(Siti Fadlilah & Adi Sucipto, 2018).

Several factors influence uric acid levels, namely age and gender. The research results showed that the majority of respondents were in the Elderly age range, 29 (72.5%). As we get older, there is a decline in the function of the body's organs and systems. The aging process can cause disruption in the formation of the urikinase enzyme which results in the oxidation of uric acid into allotonin, so that the excretion process becomes easier. If there is a decrease in the synthesis of this enzyme, the uric acid excretion process is disrupted and causes the accumulation of uric acid in the blood (Therik, 2019).

The results of this study are in line with research (Novianti et al., 2019). In the univariate analysis data, it was found that 42 (55.3%) elderly respondents had abnormal uric acid levels.

Dietary Habit

Based on the research results seen in table 2, it is known that the majority of respondents have bad eating patterns, 24 (60%). One factor that influences uric acid levels is diet. Foods high in purine consumed in excess can increase uric acid levels in the blood. Purine is an organic base compound that makes up nucleic acids or cell nuclei, and is included in the group of amino acids, namely as an element that forms proteins (Dungga, 2022).

The results of this study are in line with research (Kussoy et al., 2019) As many as 29 respondents (56.9%) had frequent high-purine eating habits. The uric acid contained in our body should not exceed normal levels. Excess uric acid can be caused by triggers, namely foods and other compounds that contain lots of purine. Purine in the human body is available as much as 85% for its daily needs, so it only needs 15% intake from outside.

Relationship between Diet and Uric Acid Levels in the Elderly

Based on the results of the bivariate analysis test shown in table 4. The Relationship between Dietary Patterns and Uric Acid Levels, it is known that 15 respondents (37.5%) had good eating patterns with normal uric acid levels. A total of 23 respondents (57.5%) had poor eating patterns with abnormal uric acid levels. The results of the Spearman's rho test analysis show that the p value is 0.000. This shows that there is a relationship between diet and uric acid levels in the elderly.

Diet is a person's way of regulating the amount and type of food in their daily consumption. A person's eating pattern can be seen from the amount, frequency, type, function and method of processing the food. Poor and irregular eating patterns, such as consuming foods high in purine content, can cause an increase in uric acid levels in the blood (Songgigilan et al., 2019).

The results of this study are in line with research (Lidiawati, M. dan Fadhil, 2019). Based on bivariate analysis using the chi-square test (α= 0.05), p value = 0.004. This shows that there is a relationship between diet and uric acid levels. Poor eating patterns occur due to irregular eating, as well as consuming foods with a high purine content.

Some food ingredients that are often consumed by people with moderate purine content are beef, chicken, tofu, tempeh, beans, spinach, kangkong, papaya leaves and cassava leaves. This food ingredient is a food ingredient that needs to be limited, consumption should not be excessive because it can increase uric acid levels in the blood.

Uric acid is a substance that is the end result of purine metabolism in the body in crystal form. Purine intake in a normal diet is 600-1000 mg/day. However, for gouty arthritis sufferers, purine intake is limited to 120-150 mg/day. Limiting purine intake means reducing consumption of foods that are high in protein. The recommended protein intake for gouty arthritis sufferers is around 50-70 grams of raw materials per day or 0.8 – 1 gram/kg body weight per day (Barangmanise et al., 2018).

CONCLUSION

Based on research data using Spearman's rho test analysis, it is known that the p value = 0.000. P value <0.005. This means that there is a relationship between diet and uric acid levels in the elderly. A bad diet that can cause high uric acid levels is food with a high purine content.

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