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**Defiction of the Level Uric Acid in Loading and Unloading Labor at Ahmad Yani Port
Ternate City**
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ABSTRACT

Hyperuricemia is a condition in which there is an increase in uric acid levels which, if prolonged, can cause gouty arthritis. Increased blood uric acid is a sign of changes in metabolic and hemodynamic function. Factors that contribute to increased production of uric acid are consumption of foods that contain lots of purines, age, genetics, obesity, drug use, physical activity and certain diseases in the blood. This study was conducted with the aim of knowing the description of uric acid levels in loading and unloading labor at Ahmad Yani Port, Ternate City. The loading and unloading labor are all workers registered at the local port who carry out loading and unloading work at the port. The purpose of this study was to determine the description of blood uric acid levels in loading and unloading labor at Ahmad Yani Port, Ternate City. The research method is cross sectional. The total sample is 81 people (100%). The results of the analysis described that before work normal uric acid levels were 81 people (100%) while uric acid levels increased by 71 people (87.7%) and normal levels were 10 people (12.3%).

Keywords: Uric Acid, Loading and Unloading Labor

BACKGROUND

The prevalence of gout in Indonesia based on Riskesdas 2018 obtained a percentage of 7.3%. Gout is estimated to occur in 840 people out of every 100,000 people in Indonesia (Ditte A.S et al., 2022). Hyperuricemia is a chronic metabolic disease caused by blood uric acid accumulation due to purine metabolism disorders (Meiqi Zhou et al.,2022). The normal upper limit is 6.8mg/dL, and anything over 7 mg/dL is considered saturated, and symptoms can occur. (Christina G & David A. M, 2022). Factors that contribute to increased production of uric acid are consumption of foods that contain lots of purines, age, genetics, obesity, drug use, physical activity and certain diseases in the blood (G.A. Dewi Kusumayanti & Ni Made Dewantari,2017).

Physical activity is the movement of the body due to the activity of skeletal muscles which results in energy expenditure. Activities carried out by humans are related to the levels of uric acid in the blood. Physical activity such as exercise or physical movement will decrease the excretion of uric acid and increase the production of lactic acid in the body (Ditte A.S et al., 2022). Physical activity can affect uric acid levels because physical activity will cause an increase in lactic acid. Lactic acid will reduce uric acid. If uric acid can be excreted by the kidneys, then uric acid will not occur (Yenrina, et al, 2014).

Based on this, a study was conducted on the description of uric acid levels in loading and unloading labors before and after physical activity at Ahmad Yani Port, Ternate City.

RESEARCH METHODS

This research is an observational study with a cross sectional approach. The study population was loading and unloading labor at Ahmad Yani Port, Ternate City. The number of samples in this study were 81 samples. This study used peripheral blood samples, using the POCT (Point Off Care Test) examination method. Examination methodthe principle of inspection reads the color formed from a reaction between a sample containing a certain chemical with the reagents on the strip. The procedure for analyzing statistical data tests using SPSS and presented in tabular form to see the description of uric acid levels for loading and unloading labor at Ahmad Yani Port, Ternate City before and after activities.

RESULTS AND DISCUSSION

Based on table 1 shows that respondents with the results of examination of blood uric acid levels before activities based on age characteristics showed normal results as many as 81 people (100%) and did not find low or increased uric acid.

Table 2 shows that respondents with the results of examination of blood uric acid levels after activities based on age were aged 30-40 normal uric acid levels were 1 person (1.23%), and increased by 13 people (16.0%) with a total of 14 people (17.3%). While from the age of 41-50 normal uric acid levels were 9 people (11.1%) and increased by 38 people (46.9%) with a total of 47 people (58.0%). And at the age of 51-60 not found normal uric acid but found uric acid increased by 18 people with a percentage (22.2%) while at the age of over 60 years which increased by 2 people with a percentage (2.5%) and not found acid levels normal veins.

Table 1. Results of Examination of Uric Acid Levels Before Activities

Age	Check up result		Amount	%
	Normal	Abnormal		
30-40	14	0	14	17, 3%
41-50	47	0	47	58.0%
51-60	18	0	18	22.2%
>60	2	0	2	2.5%
Total	81	0	81	100%

Source: (Primary Data, 2021)

Table 2. Results of Examination of Uric Acid Levels After Activities

Age	Check up result		Amount	%
	Normal	Abnormal		
30-40	1 (1.23%)	13 (16%)	14	17, 3%
41-50	9 (11.1%)	38 (46.9%)	47	58.0%
51-60	0	18 (22.2%)	18	22.2%
>60	0	2 (2.5%)	2	2.5%
Total	10 (12.33%)	71 (87.6)	81(100%)	100%

Source: (Primary Data, 2021)

Research conducted by Mahmud Fauzi & Widaryati (2018) from the age category it is known that most of them are 41-50 years as many as 42 respondents (66.7%) and a small number of respondents aged 30-40 years as much as 21 respondents (33.3%). Benny K (2018) in his research results that those aged 48-75 years have a higher rate of higher uric acid by 22.9%. Hyperuricemia is more common in men over the age of 40, because uric acid levels in men tend to increase with age. At this age, men experience a decline in ability that is not as energetic as men aged 20 years because they have problems with muscles or joints. However, the incidence of hyperuricemia becomes the same between the sexes after the age of 60 years (Firdayanti et al, 2019)

In line with research conducted by Siti Santiaji Pursriningsih and Binar Panunggal (2015), There were a correlation positive between physical activity and uric acid. Research conducted by Ilyas (2014) states that physical activity is a possible cause increase blood uric acid levels due to lactic acid production during activity, especially physical activity heavy. Pearson chi-square test results by Dayana (2015) found p value < 0.023, which means meaningful relationship between categories of physical activity intensity and serum uric acid level. Other research other research by Mahmud Fauzi & Widaryati (2018), the results of the study found that the relationship between physical with uric acid levels in Bedog Trihanggo Sleman Yogyakarta.

In anaerobic activity, the energy that will be used by the body to perform activities that require energy quickly will be obtained through the hydrolysis of phosphocreatine (PCr) and through anaerobic glycolysis of glucose. This anaerobic energy metabolism process can run in the absence of oxygen (O₂). The process of glycolysis that occurs in cells will convert glucose molecules into pyruvic acid where this process will also be accompanied by the formation of ATP. Pyruvic acid molecules formed from the glycolysis process can undergo both aerobic and anaerobic metabolic processes depending on the availability of oxygen in the body. During low-intensity exercise where the availability of oxygen in the body is large enough, the pyruvic acid molecules formed can be converted into CO₂ and H₂O in the mitochondria of cells. If the availability of oxygen is limited in the body or when the formation of pyruvic acid occurs rapidly, then the pyruvic acid will be converted into lactic acid. The heavier the physical activity and the longer it lasts, the more lactic acid is produced. An excessive increase in lactic acid will cause adhesion to blood vessels and will cause uric acid to stick to the lactic acid. So that lactic acid levels in the blood will cause disruption of uric acid excretion (Siti Santiaji Pursriningsih & Binar P, 2015)

CONCLUSION AND RECOMMENDATION

Based on the results of research on blood uric acid levels in loading and unloading labors at the Ahmad Yani port, Ternate City where the number of samples was 81 samples, it can be concluded that there were 81 people (100%) before working with normal uric acid levels, 71 people (87.7 %) had increased uric acid levels (hyperuricemia), and 10 people (12.3%) had no increase or normal uric acid levels.

Suggestions for this study are to look at other risk factors that cause an increase in blood uric acid levels, and see their relationship.

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