

# DESCRIPTION OF UREUM AND CREATININE LEVELS IN MENOPAUSE WOMEN IN THE PUSKESMAS AREA KOTA SELATAN KOTA GORONTALO

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## ABSTRACT

In menopausal women, due to decreased ovarian function, the hormone estrogen produced by the ovaries will decrease so that there is a decrease in uric acid excretion in the blood through the kidneys and result in the accumulation of uric acid in the blood. Uric acid levels in the body form crystals that accumulate and can turn into kidney stones, which will cause a person to experience impaired kidney function. One of the renal function tests is urea and creatinine.

The purpose of this study was to determine the description of urea and creatinine levels in menopausal women in the Puskesmas Kota Selatan area. This research uses descriptive quantitative research methods. The population of menopausal women was 387 people with a total sample of 20 people using a spectrophotometer.

This research was processed through the IBM SPSS Statistics V25.0 program. The results of urea examination at menopause showed that the results of high urea levels were (60.0%) and normal (40.0%) as well as the results of the creatinine examination at menopause showed that the high creatinine results were (60.0%) and the normal ones were (40.0%). Based on the results of the study, it can be concluded that menopause with high urea and creatinine results is more than normal. It is recommended that menopausal women need to have a healthy lifestyle.

**Keywords:** urea, creatinine, menopause

## INTRODUCTION

Menopause is the period when a woman stops producing estrogen and stops having menstrual periods. A woman who reaches menopause aged 45-59 years is characterized by not having menstruation for 12 months or more and factors from menopause one of which is a shrinking ovary [1].

In menopausal women, the ovaries become smaller and experience decreased function. The function of the ovaries is to produce the hormones estrogen and progesterone. During this period there was a very large decrease in the amount of estrogen important for maintaining body

physiology. The result of this condition is a decrease in the function of estrogen such as the ovaries, uterus, and endometrium, decreased strength and flexibility of the vagina and vulvar tissue, and eventually all estrogen-dependent tissue will experience atrophy (shrink). Sooner or later, disorders due to estrogen deficiency will inevitably appear in the form of increased cholesterol and triglyceride levels, reduction of bone tissue that leads to osteoporosis, psychological disorders, fatigue and depression [3].

In pre-menopausal women, there is a high estrogen hormone compared to menopausal women. The estrogen

hormone can increase the excretion of uric acid in the blood through the kidneys, so that uric acid will not accumulate in the blood. Meanwhile, in menopausal women, due to decreased ovarian function, the hormone estrogen produced by the ovaries will decrease so that there is a decrease in uric acid excretion in the blood through the kidneys and results in the accumulation of uric acid in the blood [1].

Gout that is not treated immediately will cause other health problems such as kidney stones. Uric acid levels in the body form crystals that accumulate and can turn into kidney stones, this is what will cause a person to experience impaired function of the kidneys.

In the clinical laboratory, to diagnose abnormalities in kidney function, serum urea and serum creatinine levels can be checked. Examination of urea and creatinine levels in the blood can be used as a reference to detect acute renal failure (ARF), a clinical syndrome characterized by a sudden drop (within a few hours to several days) of kidney filtering speed, accompanied by a buildup of renal metabolic waste (urea and creatinine). Increased levels of urea and creatinine indicate kidney problems [8].

Based on the above background, the authors are interested in conducting research on the description of urea and creatinine levels pThere are menopausal women in the Puskesmas Kota Selatan area.

### RESEARCH METHODS

This type of research used in this research is descriptive quantitative research. The design of this research is descriptive quantitative. The sampling technique used was purposive sampling. The population in this study were 387 menopausal women. The sample used was 20 samples. The data analysis technique used is the IBM SPSS Statistic V25.0 program.

### RESEARCH RESULT

**Table 1.** *Distribution of frequency of menopausal women based on age characteristics*

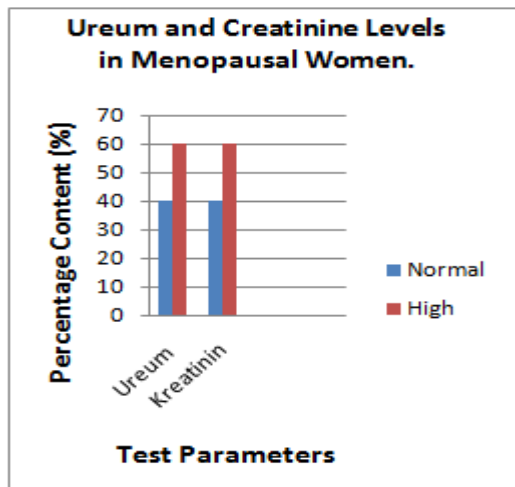
No.	Age	Frequency	(%)
1.	45-49	3	15.0
2.	50-54	8	40.0
3.	55-59	9	45.0
Total		20	100

Based on table 1 shows that menopausal women based on the age 45-49 years as many as 3 respondents with a percentage 15.0%, at the age of 50-54 years as many as 8 respondents with a percentage 40.0%, at the age of 55-59 years as many as 9 respondents with a percentage 45.0%.

**Table 2** Results of examination of urea and creatinine levels at menopause

No.	Age	Urea level	Creatinin g level	Normal Value of Ureum and Creatinine	Ret.
R1	51 Years	18 mg / dl	0.6 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	Normal
R2	52 years	29 mg / dl	1.5mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R3	51 Years	17 mg / dl	0.7mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	Normal
R4	53 years	30 mg / dl	1.3 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R5	55 years	26 mg / dl	1.3 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R6	55 years	27 mg / dl	1.6 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R7	45 years	18 mg / dl	0.8 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	Normal
R8	57 Years	17 mg / dl	0.8 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	Normal
R9	59 years	27 mg / dl	1.4 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R10	59 years	28 mg / dl	1.2 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R11	53 years	26 mg / dl	1.3 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R12	55 years	31 mg / dl	1.4 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R13	52 years	18 mg / dl	0.7 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	Normal
R14	55 years	39 mg / dl	1.9 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R15	50 years	28 mg / dl	1.3 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R16	59 years	28 mg / dl	1.3 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R17	49 years	14 mg / dl	0.8 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	Normal
R18	56 years	26 mg / dl	1.2 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	High
R19	50 years	14 mg / dl	0.6 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	Normal
R20	49 years	15 mg / dl	0.8 mg / dl	Ureum: 5-25 mg / dl Creatinine: 0.6-1.1 mg / dl	Normal

**Graph 1.** Results of Ureum and Creatinine Levels in Menopausal Women



Graph 1 shows that the results of examining urea levels in menopausal women are as much as 60% in the high category and as much as 40% in the normal category, while the creatinine level in menopausal women is 60% in the high category and as much as 40% in the normal category.

## DISCUSSION

In menopausal women, the ovaries become smaller and experience decreased function. the function of the ovaries is to produce the hormones estrogen and progesterone. At this time there is a decrease in the amount of estrogen which is very important for maintaining body physiology. The result of this condition is a decrease in the function of estrogen such as the ovaries, uterus, and endometrium, decreased strength and flexibility of the vagina and vulvar tissue, and finally all estrogen-dependent tissue will atrophy (shrink). Sooner or later, disorders due to estrogen deficiency will inevitably appear in the form of increased cholesterol and triglyceride levels, reduction of bone tissue that leads to osteoporosis, psychological disorders, fatigue and depression [3].

In menopausal women, due to decreased ovarian function, the hormone estrogen produced by the ovaries will decrease, resulting in decreased excretion of uric acid in the blood through the kidneys and results in the accumulation of uric acid in the blood [1]. Gout that is not treated immediately will cause other health problems such as kidney stones. Uric acid levels in the body form crystals that accumulate and can turn into kidney stones, this is what will cause a person to experience impaired function of the kidneys.

In the clinical laboratory, to diagnose abnormalities in kidney function, serum urea and serum creatinine levels can be checked. Examination of urea and creatinine levels in the blood can be used as a reference to detect acute renal failure (ARF), a clinical syndrome characterized by a sudden drop (within a few hours to several days) of kidney filtering speed, accompanied by a buildup of renal metabolic waste (urea and creatinine). Increased levels of urea and creatinine indicate renal impairment [8].

At menopause the level of urea in the blood is high enough due to consuming too much high protein food and it is not balanced with consuming water, where water plays an important role in digestion, metabolism in the body, if the body lacks water the filtering process of the kidneys will be disrupted and cause clinical problems. one example of kidney failure where the kidneys do not function as usual (normal).

In this case, tests that can help establish a diagnosis or abnormalities in the kidneys consist of two tests of blood urea and blood creatinine, each of which can detect kidney function and nearby kidney organs. Ureum is said to be high if the result of the urea value is greater than the normal value according to age. Adults have high urea when the urea level is more than 25 mg / dL. A high urea is a sign that there is

some medical problem or something else, namely, Protein diet, impaired kidney function, reduced blood flow to the kidneys, drug therapy. Ureum comes from the breakdown of proteins, especially those from food. In healthy people whose diets are high in protein, urea is usually above the normal range. Low levels are not usually considered abnormal because they reflect low levels of protein in the diet or expansion of plasma volume. However, if the level is very low it could indicate severe liver disease. Urea levels increase with age, even without kidney disease [5].

A high level of urea indicates a disturbance in the kidneys, but because the presence of urea is influenced by the amount of protein consumed and liver function, this test is usually performed in conjunction with a blood creatinine test. [4] stated that creatinine testing was performed to evaluate kidney function in addition, [6] also stated that one of the conditions that damage the kidneys tends to increase creatinine levels in the blood if the kidneys are not functioning properly, creatinine levels will increase and can accumulate in the blood.

Creatinine is an ideal substance for measuring kidney function because it is a product of the body's metabolism that is constantly produced, filtered by the kidneys, not reabsorbed, and secreted by the proximal tubule. Creatinine testing is a good indicator of kidney function, because this organ keeps creatinine at normal levels. Increased creatinine levels are a marker of impaired kidney function or the occurrence of kidney disease [7].

Based on the results of the examination of urea and creatinine levels in menopausal women in the Puskesmas Kota Selatan with a sample size of 20 people, the results obtained were more high 60.0% compared with 40.0% normal results.

There are several examination results that are normal because when researchers interviewed patients at the time of sampling, some menopausal women often maintained a healthy lifestyle by maintaining their diet, as well as exercising regularly in a week, consuming balanced nutritious foods, consuming lots of water sufficient white every day and always avoid excessive diets.

Based on table 1, the frequency distribution of menopausal women by age shows that high levels of urea and creatinine are dominated by the 55-59 years age group, namely 45.0%. This is in line with a study conducted by [2] that age can affect urea and creatinine levels, which at menopause urea and creatinine levels are much higher than young people. High levels of urea and creatinine indicate a decrease in kidney function which will lead to kidney failure.

Based on Figure 1, the results obtained from 20 samples, high urea levels in menopausal women were 12 samples (60.0%) and normal results were 8 samples (40.0%) Increased levels of urea are called uremia. Azotemia refers to an increase in all low molecular weight nitrogen compounds (urea, creatinine, uric acid) in renal failure.

Then the creatinine results obtained from 20 samples, high creatinine levels in menopausal women were 12 samples (60.0%) and normal results were 8 samples (40.0%) an increase in creatinine is caused due to Excessive physical activity and a diet that is not properly maintained by taking drugs, judging by the age that is usually at risk for kidney disease, namely menopausal women because the muscles at that age have begun to be disturbed and suffer from malfunctioning.

## **CONCLUSION**

Based on the results of examining urea and creatinine levels in menopausal

women in the South City Health Center, it can be concluded that:

1. High urea levels in menopausal women are 60.0% and normal as much as 40.0%
2. High creatinine levels in menopausal women as much as 60.0% and normal as much as 40.0%
3. The results of the examination of urea and creatinine levels in menopausal women in the South City Health Center showed that the results showed more high levels, namely 60.0% compared to normal results, namely 40.0%.

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