International Conference on Health Polytechnic Ministry of Health Surabaya Surabaya, 6-7 October 2021

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Welcome Message from the ICoHPS General Chair

In the name of Allah, the Most Beneficent and the Most Merciful. May peace, mercy, and blessings of Allah be upon you.

On behalf of the technical program committee, we warmly welcome you to 2021 4th International Conference of Health Polytechnic Surabaya (ICoHPS) in Surabaya, Indonesia with the theme "Empowering the Health Professionals and Community in Mitigating the Impacts of Covid-19 Pandemic".

The committee has organize dexciting technical programs for The 2nd Internationaconference on Electronics, Biomedical Engineering, and Health Informatics (ICEBEHI), The 1st International Conference on Nursing and Public Health (ICoNPH), The 1st International Conference on Midwifery (ICoMid), The 1st International Conference on Medical Laboratory Technology (ICoMLT), The 1st International Conference on Environmental Health (ICoEH), The 1st International Conference on Nutrition (ICoN), The 1st International nference on Dental and Oral Health (ICoDOH), is the annual international conference organized by Poltekkes Kemenkes Surabaya, Indonesia and co-organized by Muhammadiyah University of Surabaya, Health Academy Rustida Banyuwangi. Stikes Mitra Adiguna Palembang, Poltekkes Kemenkes Sorong, Poltekkes Kemenkes Ternate, Poltekkes Kemenkes Menado, Poltekkes Kemenkes Semarang, Poltekkes Kemenkes Banjarmasin, Poltekkes Kemenkes Medan, Poltekkes Kemenkes Aceh, Poltekkes Kemenkes Kaltim, Poltekkes Kemenkes Denpasar, Poltekkes Kemenkes Tasikmalaya, Poltekkes Konenkes Palangkaraya, Poltekkes Kemenkes Palembang, and Isabela State University Philipines As an annual international conference, 4th ICoHP provides excellent platform to share innovative idea and experiences, exchange information, and explore collaboration among researchers, engineers, practitioners and scholars in the field of health science, and medical engineering.

The Purpose of the conference are:

Knowledge, practice and experience sharing among experts to mitigate the impacts of Covid-19 Pandemic.

Achieve workable and applicable approaches to dealing with Covid-19 Pandemic

Improving public awareness about Covid-19 resilience Pandemic

Develop networking among experts and audiences from different disciplines to anticipate the new wave of Covid-19 Pandemic

Create collaboration among scholars to conduct research on the topic of Covid-19

The forms of activities are:

International Conference which will be attended by four keynote speakers from 4 countries namely Australia, Philippines, Thailand, Malaysia

International standard call for papers with International proceeding outputs, International journal and DIKTI Accredited journal.

All submitt② paper sthrough out went through arigorous review process and each paper was evaluated. Besides those regular sessions, 4th ICoHPS 2021 also features world-class keynote/plenary speeches and distinguish-invited speakers that reflect the current research and development trend②in the aforementioned fields. We are deeply indebted to all seven technical program committe members as well as our reviewers, who volunteered a considerable amount of their time and expert set ensure afair, rigorous, and timely review process. Many thanks should be given to our keynote and invited speakers who will share their experience in this conference. Last but not least, our since regratitude should begiven to all authors for ②ibmitting their work to 4th ICoHPS 2021, which has allowed us to assemble a high q u a l i t y technical program.

Welcome to 4th ICoHPS 2021 and hope you will enjoy this virtual conference.

With best regards, Dr. Siti Nur Kholifah General Chair



Welcome To Health Polytechnic of the Ministry of Health, Surabaya



drg. Bambang Hadi Sugito, M.Kes Director Health Polytechnic of the Ministry of Health, Surabaya Assalamu'alaikumWr. Wb.

Praise Allah SWT for bestowing His mercy and blessings, and with His permission we held the The 4th International Conference of Health Polytechnic Surabaya (ICoHPS) in 2021 which is part of a series to commemorate the LUSTRUM IV 2021, Ministry of Health Surabaya Polytechnic.

The Covid-19 pandemic situation requires partnerships of various parties and

the preparedness of

supporting human resources. Health professionals on the frontline need updating on knowledge, skills and awareness to fight against Covid-19.

From some of the explanations regarding the Covid 19, the PoltekkesKemenkes Surabaya will hold 4th International Conference of Health Polytechnic Surabaya (ICoHPS) with the theme "Empowering the Health Professionals and Community in Mitigating the Impacts of Covid-19 Pandemic". This Conference will bring all scholars, scientists, epidemiologists, medical doctors, nurses, allied health professionals, and even politicians to share their expertise to attain a workable approach to dealing with the Covid-19." on 6 – 7 October 2021, Implementation of Activities in a virtual conference.

The conference consists of seven conferences in accordance with scientific families, including: Electromedical Engineering, Nursing, Midwifery, Medical Laboratory Technology, Dental Nursing, Environmental Health. The name of the International Conference (IC) under the umbrella of 4th ICoHPS consis

- 1. The 2nd International Conference on Electronics, Biomedical Engineering, and Health Informatics(ICEBEHI)
- 2. The 1st International Conference on Nursing and Public Health (ICoNPH)
- 3. The 1st International Conference on Midwifery (ICoMid)
- The 1st International Conference on Medical Laboratory Technology (ICoMLT)
- The 1st International Conference on Environmental Health (ICoEH)
- 6. The 1st International Conference on Nutrition (ICoN)
- 7. The 1st International Conference on Dental and Oral Health (ICoDOH)

Finally, I would like to congratulate and say thanks to the Co Host consisting of 12 Poltekkes in Indonesia, Muhammadiyah University of Surabaya, Health Academy Rustida Banyuwangi. Stikes Mitra Adiguna Palembang..and all participant from other institution participating in the 4th International Conference of Health Polytechnic Surabaya (ICOHPS).

May God the Almighty facilitate our work. That is the delivery of my welcome. Thank you.

WassalamualaikumWr. Wb



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The Effect Of Drinking Calcareous Water On The Image Of Renal Function And Calcium In Kesan Eastern Mountain Residents, Ketapang Madura

Rahma Widyastuti^{1(CA)}, Ellies Tunjung S.M², Nur Vita Purwaningsih³

I(CA) Department of Medical Laboratory Technology, Muhammadiyah University of Surabaya,
Indonesia;blue4rahma@gmail.com (Corresponding Author)

Department of Medical Laboratory Technology, Muhammadiyah University of Surabaya, Indonesia; elliestunjungismail@gmail.com

Department of Medical Laboratory Technology, Muhammadiyah University of Surabaya, Indonesia; vitasagi86@gmail.com

ABSTRACT

According to observations made in the hamlet of Gunung Kesan Timur, Paopale Laok Village, Ketapang, Sampang, Madura, locals in general continue to use well water. People drink calcareous well water without first filtering it. It can be seen in the well water container that the water includes lime, which results in a white crust. Objective: The goal of this research was to find or how residents in the Gunung Ketapang Madura sub-village described their renal function and calcium levels. Methods: The type of research used was descriptive research, The villagers of Gunung Kesan Timur Hamlet, Paopale Laok Village, Ketapang District, Sampang Madura, who drank calcareous well water were the subjects of this study. The samples were gathered from up to 30 people utilizing observational and questionnaire sampling approaches. Result: The creatinine results from 30 samples revealed that 25 (83%) samples had normal creatinine levels and 5 (17%) samples had abnormal creatinine levels, while the BUN results for 30 samples were declared to be 100percent normal, and the calcium results revealed that 13 samples (43%) were declared abnormal and 17 samples (57%) were declared normal. High creatinine and calcium levels have consequences.

Keywords: Calcium; Calcareous Water; Renal Function

INTRODUCTION

Water is a critical need for people, whether directly or indirectly. Water is an absolute necessity for survival. Humans cannot survive for lengthy periods of time without drinking water. Meanwhile, water thatis directly drank has certain needs, particularly in terms of health. Humans can identify the type and amount of clean water that is helpful for daily life in order to meet water needs, because if both quality and quantity are not met, it can have a negative influence on socioeconomic health (Munfiah and Setiani, 2015)

Water is a basic need for humans with all kinds of activities which can be used for purposeshousehold activities such as drinking, bathing and other, so effort is seeded supply of clean water that meets clean water quality requirements (Yunus, 2016). Where it is set in Regulation of the Minister of Health of theRepublic of Indonesia No.416/Menkes/Per/XI/1990, regarding quality clean water in hilly areas or in thelimestone mountain area causes condition of polluted clean water sources especially in the dug wells around. Limestone mountains contain lime, thus causing the water to become hard. Parameters used for measuringthe low quality of ground water caused by rock structure and the type of soil, one of which is hardness, maximum level of hardness which is regulated in the Permenkes, namely in above 500 mg/L. Water usageexcessive or repeated pain can have a detrimental impact for the body, one of which is disease kidney stones(Astrini, 2016). Water containing lime or having a high hardness level might induce renal difficulties over time due to the

Water containing lime or having a high hardness level might induce renal difficulties over time due to the formation of CaCO₃ (Krisna, 2011). Creatinine levels, urea levels, or BUN (Blood Urea Nitrogen), and creatinine clients are all common tests for renal function. Creatinine is an endogenous metabolic product that can be used to evaluate glomerular function. Urea is a nitrogen compound secreted by the kidneys as a result of protein and food. Every day, the same quantity of creatinine is created and eliminated in the urine (Saputri *et al.*, 2019). DEPKES RI states that the maximum calcium content in drinking water is 75 mg / liter of drinking water and there is no minimum requirement. Water quality requirements as one of the chemical parameters, namely the amount of mineral content such as calcium and magnesium. Consuming drinking water with a mineral composition in water that contains a lot of calcium ions is thought to cause hyperexcretion of calcium and affect health (Umboh, 2016). Calcium ions are really needed in the body, generally calcium levels in the blood must be carefully controlled. In a day consumption of calcium should not exceed 2500 mg. Hypercalcemia is a conditioncaused by excessive levels of calcium in the blood. In this situation, the serum calcium level is >10.4 mg/dl (Hidayat, et.al, 2017).

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Sampang Regency, Madura, East Java Province, Indonesia. Based on its geology, Sampang Regency consists of several types of rock, one of which is limestone (chalk). Observations made in the Dusun Gunung Kesan Timur, Paopale Laok Village, Ketapang, Sampang, Madura, it was found that the villagers generally still use well water as a source of clean water for household purposes, both for washing, bathing, and even being consumed as drinking water. It has become a habit every day, the people consume calcareous well water without being processed first. It can be seen from the well water reservoir that causes a white crust which is a feature or sign that the water contains lime. Based on the above background, the research on the habit of consuming calcareous well water on the description of kidney function and calcium levels in the people of Dusun Gunung Kesh Timur, Ketapang Madura, especially in the village of Paopale Laok. The results of the study are expected to provide information to the public about drinking water containing lime for health.

9 METHODS

The type of research used was descriptive research, which is research that aims to observe and explain a situation or occurrence, in this case, the effects of drinking calcareous well water on kidney function and calcium levels in the people of Dusun Gunung Kesan Timur, Paopale Laok Village, Sampang Madura. The inhabitants of Dusun Gunung Kesan Timur, Paopale Laok Village, Ketapang District, Sampang Madura, who drank calcareous well water were the subjects of this study. The samples were gathered from up to 30 people utilizing observational and questionnaire sampling approaches.

RESULTS Results of Creatinine Levels in People Consuming Calcareous Water

Tabel 1. Percentage of Creatinine Levels in People Consuming Calcareous Water in Dusun Gunung

	Kesan Timur	
Area	Frequency	Percentage
Normal	25	83
Abnormal	5	17
Total	30	100

According to table 1, the results of creatinine levels in 30 samples showed that 25 persons (83%) hadnormal creatinine levels and 5 people (17%) had abnormal creatinine levels.

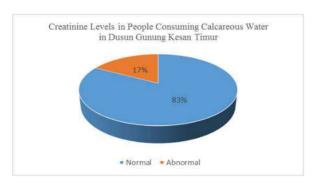


Figure 1. Creatinine Levels in People Consuming Calcareous Water in Dusun Gunung Kesan Timur

Results of Creatinine Levels in People Consuming Calcareous Water

Table 2. Percentage of BUN Levels in People Consuming Calcareous Water in Dusun Gunung

	Kesan Timur	
Area	Frequency	Percentage
Normal	30	100
Abnormal	0	0
Total	30	100

According to table 2, the results of BUN levels in 30 samples showed that 30 persons (100%) hadnormal BUN levels.

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BUN Levels in People Consuming Calcareous Water in Dusun Gunung Kesan Timur

Normal Abnormal

Figure 2. BUN Levels in People Consuming Calcareous Water in Dusun Gunung Kesan Timur

Results of Calcium Levels in People Consuming Calcareous Water

Table 3. Percentage of Calcium Levels in People Consuming Calcareous Water in Dusun

	Gunus Kesan Timur	
Area	Frequency	Percentage
Normal	17	57
Abnormal	13	33
Total	30	100

According to table 3, the results of calcium levels in 30 samples showed that 17 persons (57%) hadnormal calcium levels and 13 people (33%) had abnormal calcium levels.

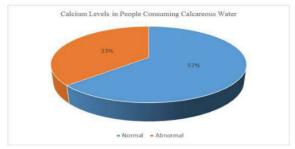


Figure 3. Calcium Levels in People Consuming Calcareous Water in Dusun Gunung Kesan Timur

Analysis of Creatinin, BUN and Calcium Based on gender

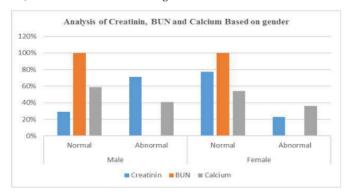


Figure 4. Analysis of Creatinin, BUN and Calcium Based on gender in Dusun Gunung Kesan Timur Based on

figure 4 shows the results of creatinine, BUN, and calcium by gender. Males had normal reatinine levels of 5 (29%) and abnormal creatinine levels of 12 (71 percent). Normal creatinine levels were

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found in 10 (77%) of females, while abnormal creatinine levels were found in 3 (23 percent). Both men and women had normal BUN levels is 100 percent, in the BUN results. The calcium levels in guys with normal calcium levels are 10 (59%) and those with abnormal calcium levels are 7 (41 percent). Normal calcium levels were 7 (54%) in the female sex, while aberrant calcium levels were 6 (36 percent).

DISCUSSION

cased on the results of a study of 30 residents in Gunung Kesan Timur Hamlet who drank calcareous well water. The purpose of this study was to define the definitions of creatinine, BUN, and calcium levels. There are three indicators used to measure renal function in this study: creatinine, BUN, and calcium levels.

In figure 4 research, high creatinine levels are mostly found in men, this is in accordance with which states that gender can affect creatinine levels in the blood. Where men are more susceptible to increased creatinine levels caused by several factors, such as excessive physical activity, resulting in changes in musclemass and is influenced by lifestyle, one of which is food. Women usually have lower creatinine levels than men, because women usually have less muscle mass. Creatinine is a metabolic waste of muscle protein, the amount of creatinine per unit of muscle mass is consistent and the level of creatinine breakdown is also consistent. Thus, the serum creatinine concentration is very stable and is a direct reflection of muscle mass. This is also in accordance with the statement of (Saputri *et al.*, 2019) which states that age and gender in older people have much higher creatinine levels than young people, while in men creatinine levels are higher than women.

In table 3, normal calcium levels were obtained as many as 17 people (57%) respondents. According to Getas, et.al (2015) normal blood calcium levels are influenced by the lifestyle and physical activity of each individual, so that reducing the level of calcium absorption in the kidneys can reduce the rate of kidney stone formation. This is in line with (Ida Bagus Rai Wiadnya, 2018) that normal blood calcium is caused because calcium metabolism in the body runs normally and there are no disturbances in the factors that affectblood calcium levels. Calcium levels are controlled by various factors including the intake of nutrients received by the body. In addition, control was also carried out by 1,25-dehydroxycholecalciferol, parathyroidhormone, calcitonin, phosphorus, protein, and estrogen. As many as 13 people (43%) of respondents had calcium levels above normal, this was due to the drinking water used by the people of Dusun Gunung Kesan Timur, namely well water containing lime which was consumed without prior processing. In addition, excessive intake of calcium-containing foods also affects calcium levels in the blood. An increase in blood calcium in serum is a condition in which the body absorbs more calcium than it needs. In the formation of calcium stones there is an increase in the serum calcium concentration. This suggests that calcium stone formation is a manifestation of altered regulation of Ca and vitamin D (Ketha *et al.*, 2015).

According to research (Sumampouw, 2010) said that although it is not known the amount of exposureand the time it takes calcium intake into the human body can increase the risk of kidney stones. It must be admitted that the occurrence of kidney stones is not only due to calcium intake but is caused by many factors such as intake of phosphate, fluids, fiber and so on. In addition, life behavior, age, parental disease history and weight also affect the occurrence of kidney stones.

In general, the homeland has a high level of hardness. The cause of hardness is because groundwateris in direct contact with Calcareous Water which is classified as having soft to high hardness. The hardness of this well water is temporary hardness so that it can be reduced by heating and deposited, resulting in the formation of insoluble and precipitated calcium carbonate salts (Astuti et al, 2016).

Based on the survey results, respondents drink their well water directly without boiling it. According to Sumantri's research cited by Yazid & Afda'u (2016), it is often said that the hardness obtained in the air is used as a raw source of clean water sourced from the soil or whose soil contains lime and mineral salt deposits. Hard water is not very good for domestic use and industrial use.

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CONCLUSION

Conclusion:

Based on the results of the study, it can be concluded that creatinine from 30 samples was known that 25 (83%) samples had normal creatinine levels and 5 (17%) samples had abnormal creatinine levels, while the BUN results for 30 samples were stated to be 100 percent normal, and calcium results were obtained. namely 13 samples (43%) were declared abnormal and 17 samples (57%) were declared normal.

Recommendation:

It is preferable for Paleo Laok villagers to drink water from taps or low-calcium water, or to purifywell water before consuming it.

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