



OVERVIEW OF HEMOGLOBIN LEVELS OF ELDERLY IN THE REGION OF SUB-DISTRICT CIBEBER, SOUTH CIMAHI, CIMAHI CITY

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Abstract, Background: *The elderly are a group of people aged 60 years with increasing age in humans being a risk factor for decreased body function and immunity in humans. with anemia. Objective of this study is to determine the description of hemoglobin levels in the elderly living in subdistrict Cibeber, South Cimahi, Cimahi city and the specific purpose is to determine the screening for anemia in the elderly.*

Methods: *The method used in this research is descriptive. The sample used is the elderly aged 60 years which consists of 37 respondents.*

Results: *The results show that the results obtained are 6 elderly people (16%) with haemoglobin levels below normal and 31 elderly (84%) with normal hemoglobin levels.*

Conclusion: *The conclusion from the results of this study showed that the results showed that the elderly were susceptible to a decrease in hemoglobin levels.*

Keywords: *elderly, hemoglobin levels, anemia*

Background

According to the World Health Organization (WHO), the elderly (elderly) are a group of people aged 60 years¹. With increasing age in humans, it becomes a risk factor for decreased body function and immunity in humans, because with increasing age a person will experience an aging process that causes damage to molecular and cellular. In addition to a decrease in body function and immunity, in the elderly there is also a decrease in hemoglobin levels, if there is a decrease in hemoglobin levels, the oxygenation process in muscles and body tissues will decrease and the decline in hemoglobin

levels in the elderly is closely related to lifestyle factors².

Decreased hemoglobin levels are called anemia. Anemia is a decrease in hemoglobin levels <12 mg/dl for women and <13 g/dl for men³. Anemia in the elderly can increase the risk of physical, mental, sensory limitations in the long term interacting with the environment compared to the elderly without anemia. This increase in disability results in a decrease in the ability to live independently in the elderly².

Anemia in the elderly is something that can lead to serious problems for the elderly themselves.

Several studies have stated that anemia in the elderly can increase the risk of decreased physical strength, decreased muscle strength, increased fatigue, weakness, frequency of falls, increased risk for hospitalization, increased mortality and functional limitations and cognitive impairment in the elderly⁴.

The prevalence of anemia in Indonesia in the elderly is 34.2%. Meanwhile, based on the results research of, the results of anemia in the elderly were found to be 18.2%, while⁵. in her research showed that after analyzing the hemoglobin level data, it was found that a 12.50% decrease was found in the category of mild anemia. of a total of 80 elderly people⁵

Method

The research method used is descriptive. The population in this study were the elderly living in RW 11, Cibeber sub-district, South Cimahi, Cimahi city. The sample used in this study was 37 samples of venous blood with EDTA anticoagulant. The samples selected in this study were elderly people who were more than 60 years old and had no history of heart failure, kidney failure and tuberculosis.

The examination carried out is an examination of hemoglobin levels. Then the data obtained from the examination of hemoglobin levels in the elderly is processed and presented in tabular form. The location of this research was carried out at the Hematology Laboratory, Faculty of Health Sciences and Technology, Jenderal Achmad Yani University, Cimahi. This research was conducted in January - April 2022.

Results and Discussion

This research was conducted in RW 11, sub-district Cibeber, South Cimahi, Cimahi City, the sample used in this study was venous blood with EDTA anticoagulant from 37 elderly people. The examination carried out was Hemoglobin levels in the elderly, in this examination of hemoglobin levels using the photometric method which

previously had quality control using mindray hematology control with the results of quality control as shown in the table.

Table 1. Quality Control Mindray BC 1800

No. Lot	Range	Hb	Result
B1121L (Low)	5,7-6,5 gr/dl	6,0 gr/dl	Accepted
B1121N (Normal)	13,1-14,3 gr/dl	13,7 gr/dl	Accepted
B1121H (High)	18,1-19,7 gr/dl	18,9 gr/dl	Accepted

To fulfill the requirements of the laboratory according to the standard, quality control is checked (low, normal, high). After the control is accepted, the hemoglobin level in the sample is checked. Based on table 2, the data of respondents who participated in this study were male, namely as many as 24 elderly (65%) while in women as many as 13 elderly (35%).

Table 2. Characteristics of the Sample by Gender

Gender	Amount	Percentage
Men	24	65 %
Women	13	35 %
Total	37	100 %

Based on table 3, most of those who participated in this study occurred at the age of 60-74 years as many as 36 elderly (97%), while at the age of 75-90 years as many as one elderly (3%), Based on the incidence of decreased hemoglobin levels

Table 3 Characteristics of Samples Based on Age

Age	Amount	Percentage
60-74 years	36	97 %
75-90 years	1	3 %
Total	37	100 %

Based on table 4, it can be seen that of the 37 elderly people, 31 elderly (84%) had normal hemoglobin levels and 6 (16%).

Table 4 Values of hemoglobin levels in the elderly

Result	Amount	Percentage
Hb level Normal	31	84 %
Hb level below Normal	6	16 %
Total	37	100 %

From the results of the questionnaire, there were one elderly who experienced protein deficiency, one elderly experienced a lack of fruits and vegetables, two elderly experienced a lack of sleep hours and three elderly experienced 5L symptoms. So in this study there were six elderly who experienced a decrease in hemoglobin levels because of them there was one elderly who lacked protein. Protein plays a role in transporting iron to the bone marrow to form new hemoglobin molecules, iron is a heme component of hemoglobin, proteins in the blood bind oxygen and allow blood cells to bind oxygen throughout. When iron stores run out, there will be a decrease in blood cells red and the amount of hemoglobin in it decreases, resulting in a decrease in hemoglobin levels⁶.

According Hidayatul, L.M & Nurul, L.V⁴ by consuming fruits and vegetables can affect hemoglobin levels because the content of fruits and vegetables will be oxidized to Fe^{3+} which in the body there is a ferriductase enzyme assisted by coenzymes derived from vitamin C into Fe^{2+} , Fe^{2+} is iron which is used as raw material for making hemoglobin. From the results of this study, there was 1 elderly who experienced a decrease in hemoglobin levels due to reduced consumption of fruits and vegetables so that hemoglobin levels were below normal.

Consuming fruits and vegetables is very important in increasing the formation of non-heme iron, in this study in line with research conducted by Humphreys that the elderly who

Based on the results obtained were 16% of the elderly with decreased hemoglobin levels and 84% of the elderly with normal hemoglobin levels. From the research data, it is known that the lowest hemoglobin level is 10.7 and the highest hemoglobin value is 16.2 g/dL.

consume less fruits and vegetables experience a decrease in hemoglobin levels while in the elderly who consume enough fruits and vegetables a decrease lower hemoglobin⁷

The requirement for sleep in the elderly aged 60 years is six and a half hours and six hours at the age of 80 years. The quality of a person's sleep does not depend on the amount or duration of sleep, but on how the person's sleep needs are met. Factors that affect poor sleep quality are health status, psychological stress, diet, lifestyle, environment and drugs. One of the problems that arise due to poor sleep quality is a decrease in hemoglobin levels or what is called anemia. Sleep disturbance is one of the factors that can affect hemoglobin levels in the blood. Sleep disturbances cause a person's sleep quality to be poor, this is a trigger for oxidative stress which if it lasts more than 12 hours can cause erythrocyte lysis faster than the time. The lysis of erythrocytes causes low hemoglobin in the blood⁷

Based on the results obtained, there are 3 elderly who experience 5L symptoms. Decreased hemoglobin levels can cause fatigue, weakness, reduced energy and a feeling of lightheadedness. This decrease in levels if you gain weight will have a stroke or heart attack. Among the decreased levels of hemoglobin, some of them experienced 5L symptoms, namely weakness, fatigue, lethargy, fatigue and weakness. Among these other symptoms are dizzy eyes, reduced

concentration power and decreased endurance in the body.

In this study, there were criteria for respondents who were not sampled including those who had heart failure, kidney failure and tuberculosis because some of these diseases will affect hemoglobin levels in blood.

Conclusion

Based on the results of the study, it can be concluded that there are 6 elderly people (16%) with below normal hemoglobin levels and 31 elderly (84%) with normal hemoglobin leve

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