

Research Article

Correlation Between the Quick of Blood and Quality of Life of Chronic Kidney Disease Patients in Dialysis Therapy in the Hemodialysis Unit at Wava Husada Hospital

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Abstract.

Patients with chronic kidney disease during their treatment or during hemodialysis therapy will experience various health problems in their lives, especially in their quality of life. Hemodialysis therapy is the last form of therapy for patients with stage 5 chronic kidney disease. Setting and monitoring the Quick of Blood (QB) in accordance with the vascular access capability used, as well as the patient's hemodynamic condition and comfort, is expected to affect the quality of life of chronic kidney disease patients. This research aimed to find the correlation between Quick of Blood (QB) and patient quality of life. The research employs a quantitative approach with a correlational study, and the data was taken at Hemodialysis Unit at Wava Husada Hospital Kepanjen Malang. The sampling technique used was purposive sampling, with a total of 105 respondents. The instrument used was SF 36 questionnaire. The analysis of the data used the Pearson test. The result of the analysis shows a p-value of 0.037, so there is a significant correlation between quick of blood (QB) and the quality of life of hemodialysis patients. Most of the respondents were discovered to have a moderate quality of life

Keywords: hemodialysis, quality of life, quick of blood

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1. INTRODUCTION

Chronic kidney disease (CKD) is currently attracting a lot of attention, although patients are undergoing dialysis therapy for the end-stage. Patients who undergo long-term dialysis (HD) therapy, have concerns about the condition of the disease they have, some patients sometimes think that their life is only a matter of days when patients find out they have to undergo dialysis therapy for life. However, a fairly good quality of life will help prolong the patient's life. But in some patients with chronic kidney disease (CKD) who undergo dialysis, a good quality of life is not easy for them to achieve, this

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is mostly due to several factors, including costs, depression that are being experienced by the patient or the patient's (1)

The number of patients suffer from chronic kidney disease (CKD) and also undergoing dialysis therapy is very large and tends to increase from year to year. World health organization (WHO) says Patients suffering from chronic kidney disease (CKD) in the world in 2013 increased by 50% from the previous year, and also in America the incidence rate in patients with chronic kidney disease (CKD) increased by 50% in 2014 and annually around 200,000 Americans undergo hemodialysis (2)(3). The incidence of patients with kidney failure in the world globally is approximately 500 million people while 1.5 million have to undergo hemodialysis (4). New patients are patients who have undergone dialysis therapy for the first time, while active patients here are all patients who have undergone routine HD and are still alive until now. In 2017 there was a sharp increase in active patients, due to more patients being able to undergo hemodialysis for a longer time, and due to the role of of the existence of JKN in maintaining the continuity of dialysis therapy(2).

Quick of blood (QB) or called blood flow velocity is the amount of blood that can flow in units of time/minute (ml/minute). The more blood that can be flowed into the dialyzer in that minute, the more toxic substances and fluids that can be removed from the patient's body. In previous studies, it was said that an increase in quick of blood (QB) can increase the efficiency of hemodialysis. Because the right quick of blood (QB) setting is needed to achieve optimal urea clearance so that it will affect the quality of life in chronic kidney disease (CKD) passion (1)(5). The success of hemodialysis therapy is determined by the fulfillment of the hemodialysis dose according to the patient's needs, if the hemodialysis dose is not sufficient for the patient's needs, the patient will experience several disorders such as nausea, weakness, shortness of leg cramps, headaches and vomiting and even hypotension. Many factors affect the quality of life of patients with chronic kidney failure undergoing dialysis therapy. These factors are nutritional status, comorbid conditions, duration of hemodialysis and medical management, based on previous research the nutritional status factor has the highest value undergoing dialysis therapy (7). These factors are nutritional status, comorbid conditions, duration of hemodialysis and medical management, based on previous research the nutritional status factor has the highest value (8).

Based on the author's observations while working in the hemodialysis room, patients with quick of blood (QB) according to the standard are 300 ml/hour, are those who rarely have complaints during HD, even they come for HD alone without any assistance from their family. Therefore, the authors wanted to examine the relationship of quick of blood

(QB) to the quality of life of patients. Quick of blood (QB) is given starting with an initial speed of 100 ml/minute, in patients who have undergone HD therapy, the speed will be increased gradually to a standard speed. In new patients undergoing HD therapy, the quick of blood (QB) is started with an initial speed of 100 ml/min up to a maximum speed of 160-180 ml/min. Quick of blood (QB) below 200 ml/minute in addition to new patients, is also given to pediatric patients, elderly patients, patients with certain cases such as cardiac disorders. For standard quick of blood (QB), that is 300ml/min given to HD patients with minimal heparin, or no heparin, patients with short clotting time, young patients, and good general condition (7)(9).

Quality of life is a condition where individuals get satisfaction or enjoyment of daily life. Quality of life includes physical health and mental health, which means that if a person is physically or mentally healthy, then the individual can achieve satisfaction in his life. Physical health can be assessed from physical function, limited physical role, presence of pain in the body and perception of health. Meanwhile, mental health can be assessed from social function, as well as limited emotional roles (2). Patients with chronic kidney disease (CKD) in improving their quality of life are influenced by several things, including: gender, level or stage of CKD frequency of hemodialysis therapy, and the presence of social support. The quality of life of patients with chronic kidney disease (CKD) has attracted the attention of health professionals. Hemodialysis therapy make their quality of life to be at a low level with physical conditions often feeling tired, in pain, also often anxious, in their psychological condition they did not have the motivation to recover (10). In terms of social relations and the surrounding environment, they withdraw from activities in the community, while 42.9% have a high level of quality of life. The results of this study indicate that the quality of life in chronic kidney disease (CKD) patients is low, but half of the patients have a high quality of life even though they are undergoing hemodialysis therapy (8)(11)(12).

2. MATERIALS AND METHODS

This study use a quantitative approach with the correlational method. The population in this study were patients with chronic kidney disease (CKD) who underwent hemodialysis at Wava Husada Hospital Kepanjen Malang as many as 122 patients. Purposive sampling is a sampling technique where the number of samples with criteria: active patients and agree will be respondents. The sample are 105 respondents. In this study, the instrument used was the SF 36 Questionnaire

3. RESULTS

TABLE 1: Distribution Frequency of Respondents.

Gender	Frequency	Percent
Male	42	40.0
Female	63	60.0
Total	105	100.0
Age	Frequency	Percent
17-25	3	2.9
26-35	8	7.6
36-45	24	22.9
46-55	31	29.5
56-65	27	25.7
>65	2	1.9
Total	105	100
Education	Frequency	Percent
elementary	16	15.2
Junior high school	80	76.8
Senior high school	9	8.6
university	0	0.0
Total	105	100

Based on table 1. it is known that the characteristics of the research subjects are mostly women as many as 63 respondents (60%), while the minimum age is 17-25 years as many as 3 respondents (2.9%), while the highest age is at the age of 46-55 years as many as 31 respondents (29.5%). In terms of education, most of them have high school education as many as 84 respondents (80%).

TABLE 2: Distribution Frequency Length of HD.

Length	Frequency	Percent
6 month-1 year	10	9.5
>1 year	95	90.5
Total	105	100.0

Based on table 2, from 105 respondents, the average length of HD is 6 months-1 year as many as 9.5% of respondents, HD is more than 1 year as many as 90.5% of respondents.

TABLE 3: Distribution Frequency Quick of Blood.

QB	Frequency	Percent
Low QB (<300)	42	40.0
Standart (≥300)	63	60.0
Total	105	100.0

Based on table 3, Data Frequency Distribution by QB Round. Round the average rotation speed or called Quick of Blood when respondents under going HD, as much as 40% use Low Quick of Blood, while 60% use Standard Quick of Blood.

Based on table 4, Frequency distribution of data based on quality of life of Chronic Kidney Disease patients undergoing routine hemodialysis therapy at the Hemodialysis Unit of Wava Husada Hospital Kepanjen Malang. As many as 20% of respondents have a good quality of life and as many as 48.6% have moderate quality of life.

TABLE 4: Distribution Frequency Quality of Life.

Quality of Life	Frequency	Percent
Good (76-100)	21	20.0
Moderate (60-75) Less (<60)	51 33	48.6 31.4
Total	105	100.0

TABLE 5: Distribution Frequency by Access.

Access	Frequency	Percent
AV shunt	82	78.1
CVC Manual	10 13	9.5 12.4
Total	105	100.0

Based on table 5, from 105 respondents, the access of respondents who underwent routine hemodialysis therapy, 78.1% used AV SHUNT access, 9.5% of respondents used CVC, and 12.4% used manual access.

TABLE 6: Analysis of Quick of Blood with Quality of Life.

Analisis test	P value
Pearson	0.037
N	105

Based on table 6, the statistical test results using Pearson with SPSS v.22, the significance value of p value is 0.037 <0.05. So that the results are obtained that H1 is accepted and H0 is rejected, this shows a significant relationship between quick of blood and the quality of life of chronic kidney disease patients undergoing routine hemodialysis therapy at the Wawa Husada Kepanjen Malang Hospital Unit.

4. DISCUSSION

4.1. Quality of Life in Chronic Kidney Disease Patients Undergoing Routine Hemodialysis.

The results of the study of 105 respondents, 21 respondents have a good quality of life and 51 respondents had a moderate quality of life Patient quality of life undergoing hemodialysis therapy is strongly influenced by several things that occur as a result of hemodialysis therapy and is also influenced by the patient's own lifestyle (9). In new patients undergoing hemodialysis therapy, they tend to perceive a decreased quality of life, this is associated with Changes in life, as well as dependence on hemodialysis machines also make the activities of patients with chronic kidney disease (CKD) very limited and experience a decrease in physical health from time to time.

4.2. Quick of Blood in Chronic Kidney Disease Patients Undergoing Hemodialysis Therapy.

The results showed that 42 respondents always used low quick of blood when undergoing HD therapy, while 63 respondents always used the standard quick of blood when undergoing HD therapy. Proper setting of quick of blood (QB) is necessary for achieving optimal urea clearance so that it will affect the quality of life in chronic kidney disease (CKD) patient (6).

Quick of blood (QB) settings can also be determined based on vascular access, the vascular access used must be able to produce optimal blood flow velocity or quick of blood (QB). In patients undergoing hemodialysis therapy, very fast blood flow is required, so it is important to gain access to blood vessels. Based on vascular access that can be used in hemodialysis patients is a double lumen catheter, arterial vein fistula (Cimino) and arterial venous graft. Immediate access to the patient's circulation on emergency hemodialysis is achieved by subclavian catheterization for temporary use by inserting a double lumen (CDL) catheter. The fistula will allow arterial blood to flow through the vessels venous blood with a large caliber and the walls become thick. Fistulas take 4-6 weeks to mature before they are ready for use. This time is needed to allow the fistula to dilate properly, so that it can accept a large lumen needle with a size of 14-16 and the required blood flow is met (200-400 ml/min) (12)(5).

4.3. Relationship of Quick of Blood with Quality of Life of Chronic Kidney Disease Patients undergoing hemodialysis therapy.

From the analysis of tests that have used the Pearson test, it is known that there is a relationship between the quick of blood variable and the quality of life of chronic kidney disease patients who have undergone routine hemodialysis therapy at the Hemodialysis Unit of Wava Husada Hospital Kepanjen Malang. The data is evidenced by the value that has been obtained by using the Pearson statistical test with the results of Sig < 0.037. Because the Sig value is less than 0.05, there is a relationship between the quick of blood variable and the quality of life of CKD patients. From the results of the data above, H₀ is rejected and H₁ is accepted, which means that there is a quick of blood relationship with the quality of life of CKD patients undergoing dialysis therapy at the Hemodialysis Unit of Wava Husada Hospital, Kepanjen Malang.

There is a relationship between quick of blood setting and quality of life in dialysis patients, we hoped that the right quick of blood (QB) setting is needed to achieving

optimal urea clearance so that it will affect the quality of life in patients with chronic kidney disease (CKD) (9). The success of hemodialysis therapy is determined by the fulfillment of the hemodialysis dose according to the patient's needs, if the hemodialysis dose is not sufficient for the patient's needs, the patient will experience several disorders such as nausea, weakness, shortness of leg cramps, headaches and vomiting and even hypotension. Many factors affect the quality of life of patients with chronic renal failure undergoing dialysis therapy. These factors are nutritional status, comorbid conditions, duration of hemodialysis and medical management, based on previous research the nutritional status factor has the highest value (7)(3).

5. CONCLUSION

Based on the results of research on 105 respondents in patients with chronic kidney disease at the Hemodialysis Unit of Wava Husada Hospital, Kepanjen Malang, it can be concluded that Quick of Blood while undergoing dialysis therapy can affect the quality of life of Chronic Kidney Disease patients. Quick of Blood is not the only factor that can affect the patient's quality of life, there are still several factors that can affect the patient's quality of life, including the nutritional status of the patient, the average increase in the patient's weight, and the vascular access used by the patient while undergoing dialysis therapy.

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