

**The Relationship Between Fluid Intake Restrictions And Hemodialysis Adequacy for Chronic Renal Failure Patients During Hemodialysis Treatment in Hemodialysis Unit At Dr. Slamet District General Hospital, Garut District, 2014**

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**Abstract**

Restriction of fluid intake is a factor of the hemodialysis adequacy, which is very important in the hemodialysis success therapy for patients with chronic renal failure. The purpose of this study was to assess the relationship between fluid intake restriction and hemodialysis adequacy for chronic renal failure patients during hemodialysis therapy. This study used descriptive correlational design. The independent variable was fluid intake restriction and the dependent variable was the hemodialysis adequacy. The sample in this study was 52 patients with chronic renal failure during hemodialysis therapy in hemodialysis units dr.Slamet Garut Hospital. The result showed that most of patient (73.1%) had appropriate fluid restriction. Out of this number, 78.9% was adequate and 21.9% was inadequate. The rest (26.9%) was inappropriate fluid restriction. Out of this number, 42.9% was adequate and 57.1% was inadequate. The contingenci coefesien test showed p.value = 0.012 which was less than  $\alpha$  (0.05). Thus,  $H_0$  was rejected and it can be concluded that there was a significant relationship between fluid intake restriction and hemodialysis adequacy. For nurses in Hemodialysis Unit dr. Slamet Garut, the result can be used to promote health education using banner as a media, so that the patients and families can enhance their attention about fluid intake that consumed by the patient.

**Keywords:** Chronic Renal Failure, Hemodialysis, Hemodialysis Adequacy, Liquid Restrictions.

## Introduction

Chronic renal failure or end stage renal disease is a progressive disorder of renal function and irreversible where the body fails to maintain the ability of metabolism and fluid and electrolyte balance, which can lead to uremia (retention of urea and other nitrogen garbage in the blood) (Price & Wilson, 2006 ). Based on estimates of the World Health Organization (WHO), globally more than 500 million people have chronic kidney disease. Approximately 1.5 million people have to live a life dependent on dialysis. In addition, according to the WHO kidney disease and urinary tract has been accounted for 850,000 deaths annually. In Indonesia alone, the incidence of terminal renal failure are at 100 new patients per 1 million population per year (YDGI, 2005). In Garut district renal failure patients who are already undergoing hemodialysis treatment in 2012 as many as 76 patients who routinely perform dialysis twice a week (Health, 2013).

Dialysis patients should maintain fluid is restricted to prevent fluid overload. Clinically regular hemodialysis said adequate if the patient's general condition and nutrition in good condition. Factors that influence the dialysis adequacy, namely: fluid restriction, increasing the time of dialysis (hemodialysis frequency), nutrient limitation, use the dialysis membrane and permiabilitasnya larger size and the

latter increases blood flow (blood flow) (Sukandar.2006). The method is commonly used to assess the adequacy of dialysis or hemodialysis adequacy is URR (Urea Reduction Ratio) and  $Kt / V$  (urea Fractional Clarence). Hemodialysis therapy can be achieved when all factors of hemodialysis adequacy is achieved, but not all patients adhere. Such as fluid restriction has been calculated as a benchmark to enable patients to obey to support the healing process. Based on the results of preliminary studies in December obtained the data from the registration book room hemodialysis dr. Slamet Garut in 2013 patients with chronic renal failure who received hemodialysis therapy as many as 69 people .. In addition, the authors observed 10 patients randomized hemodialysis is being done to support the data obtained on the restriction of fluid intake and fluid suitability conducted between adequacy of hemodialysis patients with hemodialysis adequacy namely: 5 patients (50%) are not adequate to the restriction of fluid intake among which 2 patients (20%) as determined by fluid restriction and 3 patients (30%) are not in accordance with the calculation of fluid restriction. Whereas 5 patients (50%) with adequate fluid restriction including 4 patients (40%) according to the calculation of fluid restriction, and 1 patient (10%) are not in accordance with the calculation of fluid restriction. Based on the background of the phenomenon described above, researchers

interested in conducting research entitled "Fluid Intake Restriction Relationship With Hemodialysis Adequacy In Chronic Renal Failure Patients Who Undergo Hemodialysis Therapy in Hemodialysis Unit Dr.Slamet Garut Hospital".

### Research Purposes

The purpose of this study was to determine the relationship of fluid intake restriction with adequacy of hemodialysis in patients with chronic renal failure undergoing hemodialysis therapy in hemodialysis units dr.Slamet Garut Hospital.

### Research Methodology

This study used quantitative research methods descriptive correlation study. Descriptive correlation study is research the relationship between two variables in a situation or a group of subjects. The population in this study were all patients with chronic renal failure undergoing hemodialysis therapy in General Regional Hospital dr.Slamet Garut as many as 69 patients. Method of data collection is done by measuring parameters and interviews with respondents. Where the research was conducted at Hospital Health Center Hemodialysis Unit dr.Slamet Garut. with time conducted from March to April 2014.

### Research Result

**Table 1**

**Frequency Distribution Characteristics of Respondents by Gender in hospitals dr.Slamet Garut 2014**

Characteristics	F	%	
Gender	Male	25	48
	Female	27	51
<b>Total</b>	<b>52</b>	<b>100</b>	

**Table 2**

**Frequency Distribution Of Respondents By Age Characteristics In Hospitals Dr. Slamet Garut 2014**

Characteristics	F	%	
Youth Age Group	Adult Beginning	1	1.9
	Adult End	14	26.9
	The Amount	37	71.2
<b>Total</b>	<b>52</b>	<b>100</b>	

Univariate analysis  
Fluid restriction  
In this study, fluid restriction variables are divided into two

categories: appropriate and not appropriate. Appropriate if the result is  $\leq$  the results count, not appropriate if the result  $>$  of the results count.

**Table 3**  
**Frequency Distribution Restrictions Against Adequacy Hemodialis Fluid In Patients With Chronic Renal Failure In Hospital Dr.Slamet Garut 2014**

Fluid restriction	Frequency	Persentase (%)
Not Available	14	26.9
corresponding	38	73.1
<b>Total</b>	<b>52</b>	<b>100</b>

Hemodialysis adequacy In this study, variable adequacy of hemodialysis adequacy is measured by using a formula that  $Kt / V$  was made total score and subsequently

grouped into two katagorik namely the adequacy of hemodialysis. Said to be adequate if the score value between 1.2 to 1.8, while inadequate if the score values  $<1.2$  and  $> 1.8$ .

**Table 4**  
**Hemodialysis Adequacy Frequency Distribution In Patients With Chronic Renal Failure 2014**

Adequacy	Frequency	Persentase (%)
Not Adequate	16	30.8
Adequate	36	69.2
<b>Total</b>	<b>52</b>	<b>100</b>

Bivariate analysis

**Table 5**  
**Fluid Restriction Relationship With Hemodialysis Adequacy In Chronic Renal Failure Patients Who Undergo Hemodialysis Therapy Dr.Slamet In Garut Hospital 2014**

Fluid restriction	Hemodialysis Adequacy				Total		P-value
	Not Adequate		Adequacy		N	%	
	N	%	N	%			
Mismatch	8	57.1	6	42.9	14	100,0	0,012
Corresponding	8	27.1	30	78.9	38	100,0	
<b>Total</b>	<b>16</b>	<b>30.8</b>	<b>36</b>	<b>69.2</b>	<b>52</b>	<b>100,0</b>	

Based on the results of statistical tests, proving there is a significant difference between the proportion of the corresponding fluid restriction and fluid restriction that

does not conform with the adequacy of which is obtained by P-value = 0.012. Since the P-value  $\leq \alpha$  (0.05), then  $H_0$  is rejected, it can be concluded that there is a significant

relationship between fluid restriction with hemodialysis adequacy.

## Discussion

Chronic renal failure is the inability of the kidneys to maintain the balance and integrity of the body that appear brtahap before plunging into the decline phase of the last stage renal physiology (Sukandar, 2006). When a person experiences chronic kidney disease in which the kidneys are not functioning properly, it should perform hemodialysis therapy. Hemodialysis therapy is one treatment that should be done for patients with chronic renal failure. But other than that in hemodialysis therapy, there are parameters in assessing the success of hemodialysis therapy. To determine the success of hemodialysis therapy by using the formula  $Kt / V$ , which aims to determine the adequacy of any clients who are undergoing hemodialysis therapy. Whenever action is said adequate hemodialysis when it can reach ultrafiltrasi adequacy and dialysis adequacy. Ultrafiltration is the achievement of adequate parameters dry weight patients (dry weight) is the weight of patients without edema (overhydration) (Callaghan, .ca, 2007). To maintain the patient in order to prevent edema or fluid overload, fluid restriction is required in patients undergoing hemodialysis therapy to maintain the stability of hemodialysis adequacy.

Data from research on the relationship of fluid restriction adequacy of hemodialysis in patients with chronic renal failure undergoing hemodialysis therapy in hemodialysis units dr.Slamet Hospital. Distribution of the number of respondents were 52 respondents who were undergoing regular hemodialysis therapy.

Research results in Table 4.5 the results showed that a large proportion of the adequacy of the corresponding fluid restriction is 78.9% (30 people), corresponding fluid restriction that no adequacy is 27.1% (8 people). While fluid restriction does not match that adequacy is 42.9% (6 people) are not appropriate fluid restriction that no adequacy is 57.1% (8 people). Based on the results of statistical tests, proving there is a significant difference between the proportion of the corresponding fluid restriction and fluid restriction that does not conform with the adequacy of which is obtained by P-value = 0.012. Since the P-value  $\leq \alpha$  (0.05), then  $H_0$  is rejected, so it can be concluded that there is a significant relationship between fluid restriction with hemodialysis adequacy.

The results of this study support the research of Kartika (2009) showed that the number of clients with chronic renal failure undergoing hemodialysis therapy more wayward than that adhere to this restriction of fluid intake affects the adequacy of hemodialysis. Referring to the results of these

studies it can be concluded that there needs to be an effort to raise awareness on the patient to pay more attention to the success of the process fluid restriction hemodialysis. It can be done by controlling the income that is consumed by each dialysis patients. Thus, researchers assumed that fluid restriction may affect the adequacy of hemodialysis. Therefore to support that adequate hemodialysis adequacy required counseling to families and patients about the importance of fluid restriction.

### Conclusion

Based on the research results there is a relationship between fluid restriction adequacy of hemodialysis in patients with chronic renal failure undergoing hemodialysis therapy in Haemodialysis unit dr.Slamet Garut Hospital in 2014.

### Advice

1. For Educational Institutions  
The results of this study should be used as an ingredient in the literature, especially knowledge about the adequacy of the process fluid restriction on hemodialysis.
2. For Further Research  
In further research is recommended to conduct further research on the factors adequacy of hemodialysis.
3. For the Hospital  
This study can add nursing interventions in Hemodialysis

Unit dr. Slamet Garut that can be used as an extension to the use of media such as banners. It aims to enable patients and families always pay attention to fluid intake is consumed by the patient.

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