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PREVALENCE AND BURDEN OF DISEASE OF CHRONIC KIDNEY DISEASE UNDERGOING HEMODIALISIS AT THE REGIONAL GENERAL HOSPITAL DR. ZAINOEL ABIDIN

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ABSTRACT

Background: Chronic kidney failure is a decrease in kidney function as indicated by a glomerular filtration rate <60 mL/minute per 1.73 m2, or there is kidney damage, or both occur within a period of 3 months. This disease has an economic burden due to the complex and expensive nature of kidney disease treatment and has provisions that are closely related to public policy and the financial status of each country. According to the World Health Organization, chronic kidney failure is ranked the 12th highest cause of death. Objective: To find out the prevalence and burden of chronic kidney disease undergoing hemodialysis at the Dr. General Hospital. Zainoel Abidin. Research Method: Quantitative research is descriptive with a cross sectional design. The sample was 116 patients with chronic kidney disease who underwent hemodialysis and met the inclusion and exclusion criteria, the sampling technique used total sampling. Results: Prevalence of chronic kidney disease undergoing hemodialysis at RSUD dr. Zainoel Abidin is6.48 %.Routine direct costs are Rp. 8,548,040,160 per year with an average of Rp. 895,466 per patient while incidental direct costs are Rp. 300,100,000 per year with an average of Rp. 5,456,363 per patient. Routine indirect costs are Rp. 1,065,216,000 per year with an average of Rp. 303,959 per patient while incidental indirect costs are Rp. 146,013,000 with an average of Rp.2,103,058 per patient.Burden of diseasechronic kidney disease undergoing hemodialysis at RSUD dr. Zainoel Abidin is Rp. 12,626,518,024,188.75. Conclusion: The high amount of costs incurred for chronic kidney disease will have a major impact on the economic burden. The government needs to reduce the prevalence rate of chronic kidney disease because by reducing the prevalence rate of the disease it can reduce the burden of disease.

KEYWORDS: Chronic kidney disease, direct costs, Burden of Disease.

INTRODUCTION

Kidney failure has an economic burden on sufferers in undergoing treatment to carry out their daily lives. The burden of kidney disease varies widely throughout the world, as does its detection and treatment. Although the impact of kidney disease is better defined in developed countries, evidence suggests that developing countries have a similar or even greater burden of kidney disease. This is due to the complex and expensive nature of kidney disease treatment and has provisions that are closely related to public policy and the financial status of each country (Deidra C, 2019).

Chronic kidney failure is a disease that arises from various diseases that can irreversibly change the function and structure of the kidneys over a period of months or years. Current international guidelines define chronic renal failure as a decrease in kidney function as indicated by a glomerular filtration rate of <60 mL/minute per 1.73 m2, or there is kidney damage, or both occurring within a period of 3 months, this is regardless of various causative factors. underlying (Webster AC et al., 2017).

A person is said to have end stage chronic kidney disease (end stage kidney disease) if they have a glomerular filtration rate <15 mL/minute per 1.73 m2. In end-stage chronic kidney failure, the kidneys are no longer able to support life in the long term, so sufferers of end-stage chronic kidney failure must undergo replacement kidney therapy, namely dialysis or kidney transplantation (Kalantar K et al., 2021).

Hemodialysis therapy is carried out 2-3 times a week for a period of 4-5 hours. In hemodialysis therapy, waste and excess fluid are removed using an external filter called a dialyzer. In dialize there is a semipermeable membrane. Waste removal is carried out by creating counter-directional flow where the blood flow is in one direction and the dialyzer fluid is in the opposite direction (Vadakedath S et al., 2017) (Agarwal R et al., 2019).

Based on the WHO (World Health Organization) report, chronic kidney failure is ranked 12th in the number of causes of death. This is proven by the deaths of 850,000 people every year (Wahyuningsih SA, 2020). Chronic kidney failure is also listed as the 10 main cause of decreased life expectancy or Disability Adjusted Life Years (DALYs). The burden of kidney disease varies greatly throughout the world, including in terms of testing and treatment for the disease (Deng et al., 2021).

America records that there are around 26 million people who suffer from chronic kidney failure with different levels of severity, which means more than 10% of the 200 million adult population. Meanwhile in Malaysia,It is estimated that there are 1800 new cases of kidney failure per year in a population of 18 million (Milati CR et al., 2018). The majority of costs for patients with chronic kidney disease were related to costs for renal care (including dialysis required by more than a third of those with eGFR <15 mL/min/1.73 m2 during the one-year follow-up period), while cardiovascular costs were greater. small but relatively consistent across chronic kidney disease categories. Extrapolating the findings to Canada, it is estimated that the annual cost of caring for Canadians with chronic kidney disease (not on dialysis at baseline) could be approximately $32 billion per year including costs attributable to their chronic kidney disease and costs attributable to their medical conditions others (Manns, 2019).

In Indonesia in 2018 there was an increase in chronic kidney failure by 19.3%. The increase in patients is proven by the increasing number of patients undergoing hemodialysis every year (Arianti et al., 2020). The 11th Report of the Indonesian Renal Registry in 2018 stated that there were 66,433 new patients and 132,142 active patients with a death toll of 6,898 patients or around 78%(PERNEFRI, 2018).

Regional General Hospital Medical Record Data Dr. Zainoel Abidin Aceh in 2021 there were 178 new patient visits and 17,473 repeat patient visits. The number of new patients from January 2022 to October 2022 was 214 patients with 19,527 repeat visits. Data on patients undergoing hemodialysis therapy at the Regional General Hospital dr. Zainoel Abidin Aceh in October 2022, namely 271 patients, consisting of 153 male patients and 118 female patients (RSUDZA Medical Records, 2022).

Based on literacy, no research has been found regarding the prevalence and burden of disease in chronic kidney disease undergoing hemodialysis at the regional general hospital, Dr. Zainal Abidin, so researchers are interested in conducting this research.

METHOD

This research is quantitative research. This type of research is descriptive research with a cross sectional design. This research was conducted at the hemodialysis polyclinic at Dr. General Hospital. Zainoel Abidin in May 2023.

The samples in this study were patients with chronic kidney disease who underwent hemodialysis at the regional general hospital Dr. Zainoel Abidin met the inclusion and exclusion criteria. Sampling was carried out by sampling a total of 116 patients.

Primary data is data obtained by giving a questionnaire containing questions to research subjects. WhereasSecondary data in this research is data taken from the Medical Records Installation at RSUD dr. Zainoel Abidinin the form of the number of chronic kidney patients and data on the population of the city of Banda Aceh from the Central Statistics Agency.

Univariate analysis was carried out on all research supporting variables. Where the data obtained will be recorded and collected, then presented in the form of a frequency and percentage distribution table and an analysis of each variable from the research results will be carried out

Research ethics have been issued by the Chair of the Health Research Ethics Committee (KEPPKN) of the Faculty of Medical Sciences, Zainoel Abidin General Hospital (RSUDZA) with registration number: 23-03-047. Ethical Exempted with letter number: 045/ETIK/RSUDZA/2023.

RESULTS

Data from research on the characteristics of respondents from chronic kidney disease patients undergoing hemodialysis at RSUD dr. Zainoel Abidin conducted through interviews can be seen in the table;

No.	Characteristics		Amount	%
1.	Gender	Man	61	52.6
		Woman	55	47.4
2.	Age	18-25	2	1.7
		26-45	37	31.9
		46-65	64	55.2
		>65	13	11.2
3.	Education	elementary school	18	15.5
		Junior High School	17	14.7
		high school	44	37.9
		Diploma	6	5.2
		Bachelor	27	23.3
		Masters	3	2.6
		Doctor	1	0.9
4.	Work	Civil servants	13	11.2
		Private	38	32.8
		Farmer	3	2.6
		Retired	10	8.6

		Doesn't work	13	11.2
		Housewife	39	33.6
5.	Long time undergoing hemodialysis	1-5 years	83	71.6
		5-10 years	25	21.6
		>10 years	8	6.9
Total			116	100

Table 1. *(Characteristics of Respondents)*

Based on Table 1, it can be seen that the results of research on the gender of chronic kidney disease patients undergoing hemodialysis at RSUD dr. Zainoel Abidin in the 116 patients who were respondents, there were 61 male respondents (52.6%) more than female respondents, namely 55 respondents (47.4%).

The results of research on age showed that respondents aged between 46-65 years were the most dominant age, namely 64 respondents (55.2%), and those aged between 18-25 years were the least age with 2 respondents (1.7%) . Based on the data obtained during the interview, it is known that the highest level of education among respondents was high school, namely 44 respondents (37.9%) and only 1 respondent had a doctoral degree. Most respondents' occupation was housewife, namely 39 respondents (33.6%). Meanwhile, the occupation of the fewest respondents was farmers, namely 3 respondents (2.6%). The longest period of time undergoing hemodialysis among respondents was 1-5 years, namely 83 respondents (71.6%). And the fewest respondents in the category of length of time undergoing hemodialysis were >10 years, namely 8 respondents (6.9%). Thus it can be seen that the longer the hemodialysis, the fewer respondents.

No.	Causes of Hemodialysis	Amount	%
1.	Hypertension	61	52.6
2.	Diabetes mellitus	25	21.6
3.	Obstruction – Urinary Tract Infection	16	13.8
4.	Not known	8	6,8
5.	Gout	4	3,4
6.	Polycystic Kidney Disease	1	0.9
7.	Lupus	1	0.9
Total		116	100

Table 2. *(Data from research on the causes of hemodialysis)*

Based on Table 2, it can be seen that the results of research on the causes of hemodialysis are mostly in chronic kidney disease patients undergoing hemodialysis at RSUD dr. Zainoel Abidin had hypertension, namely 61 respondents (52.6%) and the least had polycystic kidney disease and lupus, namely 1 respondent (0.9%).

No.	Health Insurance	Amount	%
1.	BPJS (Class 1)	36	31.0
2.	BPJS (Class 2)	3	2.6
3.	BPJS (Class 3)	76	65.5
4.	Other Insurance	1	0.9
Total		116	100

Table 3. *(Health Insurance Research Data)*

Based on Table 3, it can be seen that the most respondents with chronic kidney disease used BPJS class 3 insurance, namely 76 respondents (65.5%). Meanwhile, the least was using other insurance, namely 1 respondent (0.9%). Other insurance is insurance that is not included in BPJS health insurance and is insurance covered by the private company where the respondent works.

No.	Routine Direct Costs	Total Annual Fees (Rupiah)	Average/patient/times (Rupiah)
1.	Hemodialysis Costs	7,015,680,000	630,000
2.	Routine drug costs	1,478,120,160	265,466
	Total	8,493,800,160	895,466

Table 4. *(Routine Direct Cost Research Data)*

Based on Table 4, it can be seen that the data on hemodialysis costs for one year is Rp. 7,015,680,000 with the average cost per hemodialysis is Rp. 630,000. The cost of routine medicine for one year is Rp. 1,478,120,160 with an average weekly cost of Rp. 264,446. Thus the amount of routine direct costs is Rp. 8,493,800,160 with an average total of Rp. 895,466. Hemodialysis costs and routine drug costs are costsconsumables (BHP).

No.	Incidental Direct Costs	Amount	%	Total Annual Fees (Rupiah)	Average (Rupiah)
1.	Inpatient				
	Yes	55	47.4	300,100,000	5,456,363
	No	61	52.6	0	0

Total	116	100	300,100,000	5,456,363

Table 5.*(Research Results Data on Incidental Direct Costs)*

Based on Table 5, it can be seen that of the 116 patients who were respondents, there were 55 respondents (47.4%) who had undergone inpatient treatment in the last year and 61 respondents (52.6%) had only received outpatient treatment. Thus the total incidental direct costs are Rp. 300,100,000 with an average of IDR 5,456,363.

No.	**Routine Indirect Costs**	**Amount**	**%**	**Total Annual Fees (Rupiah)**	**Average (Rupiah)**
1.	Transportation costs	116	100	483,744,000	43,439
2.	Consumption Costs	116	100	248,160,000	22,284
3.	Patient Loss Productivity Costs				
	Yes	11	9.5	151,680,000	143,636
	No	105	90.5	0	0
4.	Productivity Loss Costs for Patient Companions				
	Yes	20	17.2	181,632,000	94,600
	No	96	82.8	0	0
Total				1,065,216,000	303,959

Table 6. *(Data from Routine Indirect Cost Research Results)*

Based on Table 6, it can be seen that the research data on routine indirect costs for one year is Rp.483,744,000 with an average of Rp. 43,439 for transportation costs, Rp. 248,160,000 with an average of Rp. 22,284 for consumption costs. The number of respondents who had patient productivity loss costs was only 11 respondents (9.5%), so the total patient productivity loss cost was IDR. 151,680,000 with an average of Rp. 143,636. Meanwhile onproductivity loss costs for patient companions: There were 20 respondents (17.2%) whose productivity costs for patient companions were Rp.181,632,000 with an average of Rp. 94,600. Thus the amount of routine indirect costs is 1,065,216,000 per year with an average of Rp. 303,959 per hemodialysis.

No.	Incidental Indirect Costs	Amount	%	Amount of Fee (Rupiah)	Average (Rupiah)

1.	Transportation Costs (Inpatient)	55	47.4	11,684,000	212,436
2	Consumption Fees (2 Accompanying Persons)	55	47.4	29,025,000	527,727
3.	Cost of Treatment Aids	83	71.6	89,820,000	1,082,168
4.	Patient Loss Productivity Costs (Inpatient)	55	47.4	6,600,000	120,000
5.	Patient Companion Productivity Loss Costs (Inpatient)	55	47.4	8,884,000	160,727
Total				146,013,000	2,103,058

Table 7. *(Data from Research on Incidental Indirect Costs)*

Based on Table 7, it can be seen that the data on transportation costs and consumption costs for 55 respondents who were hospitalized was Rp. 11,684,000 with an average of 212,436 and Rp.29,025,000 with an average of 527,727,The cost of maintenance aids for 83 respondents (71.6%) who used maintenance aids was Rp.89,820,000with an average of 1,082,168. The cost of patient productivity loss (inpatient care) for 55 respondents (47.4%) was Rp. 6,600,000 with an average of Rp. 120,000 and the cost of productivity loss for accompanying patients (inpatient care) for 55 respondents (47.4%) was Rp. 8,884,000 with an average of Rp. 160,727. Thus the total incidental indirect costs are Rp. 146,013,000 with an average of Rp. 2,103,058.

DISCUSSION

Routine Direct Costs

The results of research data on routine direct costs showed that the annual costs were IDR. 8,493,800,160. Routine direct costs are costs incurred for routine patient treatment. What is included in routine direct costs in this study is the cost of hemodialysis, which is Rp. 7,076,160,000. The costs incurred for one Hemodialysis procedure areRp.630,000. The costs calculated are the BHP (Consumables) costs for type A hospitals. Each hemodialysis patient should ideally undergo hemodialysis therapy 2-3x a week with a duration of 4-5 hours. In this way, patients will undergo hemodialysis 8-9 times per month and 96-108 times per year.

Hemodialysis services at RSUD dr. Zainoell Abidin has used a single use dialyzer at a rate of Rp. 630,000 per action. In contrast to research conducted by Dwiaji et al (2016), direct medical costs consist of two rates, namely 800,000 for a new dialyzer used for the first time and 600,000 for a dialyzer used the second to sixth time.(Tania & Thabrany, 2017).

The cost of routine medication obtained is IDR.1,478,120,160 per year with an average of Rp.303,959. Routine drug costs are the costs of drugs that are routinely required by patients. This fee is taken from the hospital's BHP fees. These routine medications include blood

pressure lowering drugs, injectable drugs to maintain hemoglobin, pain relievers, calcium enhancers and several drugs and vitamins according to the patient's condition. These routine medicines can only be taken once a week.

According to Madania, single hemapo erythropoietin therapy is better and costs less than giving epodion to patients diagnosed with stage 5 chronic kidney disease. Giving erythropoietin therapy to patients with stage 5 chronic kidney disease can increase hemoglobin levels according to target(Madania et al., 2022).

The cost of other alternative/traditional treatment in this study was Rp. 0. Based on interviews with hemodialysis patients, patients who have undergone hemodialysis for more than 1 year no longer do or try other alternative/traditional treatments. This is because hemodialysis patients understand the impact of trying alternative treatments which can further worsen kidney conditions. However, based on interviews, almost all patients had tried alternative treatments when they were first sentenced to hemodialysis. Apart from that, education from health workers is also very beneficial for patient compliance and compliance. Treatment for end-stage chronic kidney disease only has three treatment options, namely hemodialysis, CAPD and transplantation.

The quality of life of kidney failure patients is closely related to hemodialysis therapy. However, hemodialysis is not a therapy to cure, but hemodialysis is carried out to maintain continuity of life functions, and in cases of chronic kidney failure where the patient will be dependent for life on undergoing hemodialysis therapy. Patients who undergo regular hemodialysis therapy will have a better quality of life(Madania et al., 2022).

According to research by Meita (2020), the length of time undergoing HD can affect the quality of life of CKD patients undergoing hemodialysis. The results show that most people undergoing HD are > 5-10 years. This is because patients feel that their quality of life improves if they undergo hemodialysis regularly by following a good diet and lifestyle. In patients who have undergone HD therapy for a long time, their quality of life improves because the patient has adapted to the HD therapy they are undergoing both physically and psychologically(Madania et al., 2022)

Incidental Direct Costs

The results of the study showed that the number of patients who were respondents who were treated in the last year was 55 patients. The cost of inpatient care for 55 patients is Rp. 300,100,000 with an average of Rp. 5,456,363. These costs are calculated using the INA-CBG'S claims system, which is an application for submitting claims for hospitals, health centers and all health service providers. Payment for this treatment is based on relatively similar diagnoses

or cases. This treatment payment is differentiated based on treatment class, namely class 1, class 2 and class 3.

Those who use BPJS class 3 are participants registered in the Aceh Health Insurance (JKA) program. According to the 2018 Aceh governor's regulations which will be updated in 2022, JKA is a guarantee in the form of health protection so that participants obtain the benefits of health care and protection in meeting basic health needs provided to every resident of Aceh whose contributions are paid by the Aceh Government. The funding required for the JKA program is taken from the Aceh revenue and expenditure budget, another legal and non-binding source (PERGUB, 2022).

Respondents who use BPJS class 2 insurance are known to have received insurance from their workplace and participated in the BPJS employment program. According to Republic of Indonesia law number 24 of 2011, it is stated that "Employers are obliged to collect contributions that are borne by participants from their workers and deposit them with BPJS" (UURI 2011).

Meanwhile, class 1 BPJS insurance users consist of civil servants (PNS), retirees and independent BPJS participants. Independent BPJS participants are required to pay a contribution of Rp. 150,000/month. This is stated in presidential regulation number 64 which reads "Contributions for PBPU Participants and BP Participants with the benefit of services in Class I treatment rooms are IDR 150,000.00 (one hundred and fifty thousand rupiah) per person per month paid by PBPU Participants and Participants BP or other parties on behalf of the Participant." (PERPRES, 2020).

Routine Indirect Costs

The research results of routine indirect costs are Rp. 1,065,216,000 with an average of Rp. 303,959. These costs include transportation costs, consumption costs, patient productivity loss costs and patient companion productivity loss costs. Based on interviews, the total patient transportation costs were found to be Rp. 483.744.00. Transportation costs are costs incurred by the patient or the patient's family to take and pick up the patient to the hemodialysis room. Most patients use private vehicles such as motorbikes and cars, and some use rental cars or online motorbike taxis. One of the patients who came from Sabang Island had to rent a ferry to cross the ocean, this was because hemodialysis facilities were not yet available in the city of Sabang.

During hemodialysis, patients usually bring food to eat during therapy. This food is usually brought from home or bought at a cake shop. The food that is usually brought is rice along with side dishes, wet cakes and pastries as snacks during therapy. The amount of consumption costs varies greatly for each patient.

According to Madania et al, who conducted research at RSUD Prof. Aloe Saboe Gorontalo in 2021. The average transportation costs that patients have to pay is IDR. 50,111 and the average cost of food that patients have to pay is Rp. 25,000. These results were obtained from interviews with each patient and their companion (family), saying that some patients had a short distance from where they lived to the hospital so that the average cost of food expenses often did not occur. In this case, each of them brought food supplies from home, bearing in mind that the duration of HD therapy was only 2-3 hours per session. However, from the results of interviews, several patients said that the distance from home was quite far, so it required quite a lot of money and food costs had to be adjusted to suit conditions (Madania, 2021).

Productivity Loss Costs are costs that patients should receive when they are healthy. The potential amount of Productivity Loss in this research is Rp.151,680,000. The job characteristics in this study were mostly civil servants and retirees who did not lose their productivity costs, and some were housewives and patients who did not work. Patients who work in private places have arranged their work schedules so that they do not conflict with hemodialysis schedules.

Almost the same as the cost of productivity loss, the cost of productivity loss for patient companions is also dominantly IDR 0. This incident occurred because the patient and the patient's companion had arranged their schedule in such a way that the work schedule did not coincide with the hemodialysis schedule. If the patient or the patient's companion worked in the morning, the hemodialysis schedule would be taken in the afternoon and vice versa. However, there are also patients who go alone without needing to be accompanied by their family. Patients like this are usually patients in stable condition. In this way, the total cost of productivity is lost by patient companions181,632,000.

Incidental Indirect Costs

The total result of incidental indirect costs is Rp.146,013,000 with an average of Rp.2,103,058 per patient.This amount consists of transportation costs, consumption costs for 2 companions, costs for care aids,the cost of losing productivity for patients and the cost of losing productivity for patient companions. This cost is calculated when the patient is hospitalized. Meanwhile, the costs included in the cost of care assistance are the costs of patient health support equipment such as oxygen cylinders, etc. Some patients have a supply of oxygen cylinders at home, this supply is prepared if at any time the patient experiences shortness of breath and needs immediate treatment. However, based on interviews, almost

every patient who has an oxygen cylinder rarely uses it, because the patient will only use oxygen when needed.

Prevalence and dalys

Based on the period prevalence calculation, the prevalence period for chronic kidney disease undergoing hemodialysis at RSUD dr. Zainoel Abidin is 6.48%. The incidence of chronic kidney failure in Bali Province based on the prevalence of chronic kidney failure is 0.44% or 12,092 people out of a population of 4,225,384 people.(Srianti et al., 2021).The prevalence of kidney failure in men (0.3%) is higher than in women (0.2%) (RI Ministry of Health, 2017). This is in accordance with this study where the number of male patients was greater than the number of female patients.

Based on calculations, the YLL value is 4,379.19 years. This means that there are 4,379.19 years lost due to premature death caused by chronic kidney disease at RSUD dr. Zainoel Abidin. And the YLD value is 835.944 years. This means that there are 835,944 years lived by chronic kidney disease sufferers at RSUD dr. Zainoel Abidin is sick.

Thus, the number of DALys is 5,215,134 years. meaning there are 5,215,134 disability adjusted life years. This is different from Qalys which is used to calculate the quality of healthy life. Qalys is rarely used to compare between diseases. The limitation of this research is that Qalys was not carried out because this research was only carried out to assess the cost burden on sick people.

Burden of Disease Calculation

Burden of diseasethose with chronic kidney disease undergoing hemodialysis at RSUD dr. Zainoel Abidin is Rp. 12,626,518,024,188.75. In contrast to research conducted in Kediri on hypertensive patients, the BOD value obtained was IDR 330,882,930,485(Utari & Nurul Rochmah, 2019). This amount includes large costs in economic losses. Where this large amount can be utilized in other sectors that are more useful for development and resources.

Low disease prevalence will reduce the Government's BOD, especially the economic burden of financing curative and rehabilitative efforts, which has so far been felt to be very high. Conditions of low disease prevalence will be followed by an increase in population productivity. This is very profitable for the Government because it can spur economic growth in a region, because the costs of dealing with illness in the population can be allocated to the development of other sectors (Primayanti, 2015).

The government needs to innovate services in order to reduce BOD sufferers and BOD from the government itself. The aim of these various efforts is to improve the level of public health

so that the economic burden due to disease can be reduced. The long-term impact of disease for a country is a decrease in future capital. A decrease in future capital can hinder the progress of a region or country. It is necessary to optimize the government's health budget for the implementation of disease prevention and control so that the population's BOD and the government's own BOD can be reduced. (Primayanti, 2015).

CONCLUSION

Based on the results of research regarding the prevalence and burden of disease of chronic kidney disease undergoing hemodialysis at RSUD dr. Zainoel Abidin, it can be concluded:

- Routine direct costs for chronic kidney disease undergoing hemodialysis at RSUD dr. Zainoel Abidin is Rp. 8,548,040,160 per year with an average of Rp. 895,466 per patient.
- Direct costs incidental to chronic kidney disease undergoing hemodialysis at Dr. General Hospital. Zainoel Abidin is Rp. 300,100,000 per year with an average of Rp. 5,456,363 per patient.
- Routine indirect costs for chronic kidney disease undergoing hemodialysis at Dr. General Hospital. Zainoel Abidin is Rp. 1,065,216,000 per year with an average of Rp. 303,959 per patient.
- Indirect costs incidental to chronic kidney disease undergoing hemodialysis at Dr. General Hospital. Zainoel Abidin Rp. 146,013,000 with an average of Rp.2,103,058 per patient.
- The prevalence of chronic kidney disease undergoing hemodialysis at Dr. General Hospital. Zainoel Abidin namely6.48 %.
- Burden of diseasefor chronic kidney patients undergoing hemodialysis Rp. 12,626,518,024,188.75

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