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Description of renal function in type 2 DM patients at RSU Royal Prima Medan in 2022

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ABSTRACT

One of the chronic microvascular complications that occurs in type 2 DM patients is diabetic nephropathy, which is a condition where the kidneys experience decreased function and damage to the blood filter membrane is caused by high blood sugar levels. The aim of this study was to determine the description of kidney function in type 2 diabetes mellitus patients by looking at the glomerular filtration rate from medical record data of type 2 diabetes mellitus patients at RSU Royal Prima Medan. This type of research is descriptive observational research, the population in this study is the medical records of patients with type 2 diabetes mellitus who received treatment at RSU Royal Prima Medan in 2022 with a sample size of 34 medical records of patients with type 2 diabetes mellitus who received treatment at RSU Royal Prima Medan in 2022. 2022. Data analysis using univariate analysis. The results of the study showed that the frequency of Type 2 DM at RSU Royal Prima based on age was 5.9% of patients aged 35 - 45 years and 94.1% aged > 45 years. The frequency of Type 2 DM at RSU Royal Prima based on gender was found to be 52.9% for males and 47.1% for females. The frequency of Type 2 DM at RSU Royal Prima based on the duration of suffering from Type 2 DM was found to be 2.9% of patients with a duration of suffering < 1 year, 29.4% of patients with a duration of suffering of 1 - 5 years and patients with a duration of suffering > 5 years as many as 67.6%. Presentation of Type 2 DM Renal Function based on the age of 34 patients, the majority of GFR values were in the moderately declining GFR category for patients aged > 45 years as many as 19 (55.9%) patients. Presentation of Type 2 DM Kidney Function based on gender, the GFR value in patients based on gender of the 34 patients, the majority were in the moderately decreased GFR category in patients with female gender, 10 (29.5%) patients. Presentation of Kidney Function of Type 2 DM based on the length of time they have suffered from Type 2 DM, the GFR value in patients based on the length of time they have suffered from Type 2 DM out of 34 patients, the majority of them are in the GFR category of moderate decline in patients with a duration of suffering from DM > 5 years, 19 (55.9 %) patients.

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INTRODUCTION

The American Diabetes Association (ADA), diabetes is a group of metabolic diseases characterized by hyperglycemia (high blood glucose levels) which occurs due to abnormalities in insulin secretion, insulin action or both. Diabetes mellitus (DM) is a group of metabolic diseases characterized by hyperglycemia which occurs due to abnormalities in insulin secretion. Diabetes is divided into two, namely type 1 DM or Insulin Dependent Diabetes Mellitus (IDDM) and type 2 DM or Non Insulin Dependent Diabetes Mellitus (NIDDM). Type 2 DM occurs because pancreatic β cells produce insulin in small amounts or experience insulin resistance (Setyawati, 2020) .

Diabetes mellitus is a health problem that commonly occurs in society, because the number of this disease increases from year to year (Emy, 2021) . The number of DM sufferers continues to increase every year, especially type 2 DM. According to the 2018 Riskesdas results, the prevalence of DM has increased from 6.9% to 8.5% (RI Ministry of Health, 2018). Diabetes is experienced by many people and is a global public health problem, so that it is currently a priority in solving health problems by world leaders (Nasution, 2021) .

Type 2 DM is one of the world's health problems, according to the International Diabetes Pederation , it is recorded that in 2021 there will be 537 million people aged 20 - 79 years with type 2 DM in the world and this number can continue to rise and it is estimated that in 2030 it will be 643 million people and 783 million people. million by 2045, More than 4 in 5 (81%) adults with type 2 DM live in low- and middle-income countries. Type 2 DM is the cause of death in developing countries and there will be 6.7 million deaths in 2021, an estimated 1 person every 5 seconds (IDF, 2021) .

In several countries that are experiencing lifestyle changes that are very different from the previous way of life because they are more affluent, the prevalence of type 2 DM can reach 35%, such as in several Micronesian and Polynesian countries in the Pacific, Pima Indians in the United States, Mexicans in the United States. , Creole people in South America. Prevalence was also found in Malta, Saudi Arabia, Indian Canada and China in Mauritius, Singapore and Taiwan (Suyono, 2019) .

Based on data in Asia, it is estimated that 1 in 11 adults totaling 90 million people suffer from type 2 DM. The number of people suffering from type 2 DM is estimated to reach 113 million in 2030 and 151 million in 2045. More than 1 or 2 adults live with DM. type 2 is not diagnosed. This disease is the cause of 747,000 deaths caused by type 2 DM in 2021 in Asia (IDF, 2021) .

The prevalence of patients suffering from type 2 DM in Indonesia reached 6.2 percent, which means that there were more than 10.8 million people suffering from diabetes as of 2020. General Chair of the Indonesian Endocrinology Association (Perkeni), Prof. Dr. Dr. Ketut Suastika SpPD-KEMD said that the figure This is estimated to increase to 16.7 million patients per year 2045. With data from 2020, 1 in 25 Indonesians or 10% of the Indonesian population experiences type 2 DM. Based on Basic Health Research (RISKESDAS) in 2018, the prevalence rate of type 2 DM in Indonesia reached 10.9 percent, which is predicted to continue to increase. The number of type 2 DM sufferers in Indonesia

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based on 2018 Riskesdas data by the Ministry of Health shows an increase of 1.6% from 2013 to 2018 with the number of sufferers approximately 4 million (Saputri, 2020) .

From the following data, the provinces with the highest prevalence in 2013 - 2018 are Yogyakarta, DKI Jakarta, North Sulawesi, East Kalimantan and Aceh, however there are several provinces with the highest increase in prevalence of 0.9%, Riau, DKI Jakarta, Banten, Gorontalo and West Papua (Republic of Indonesia Ministry of Health, 2020) .

In 2019, the Medan City Health Office recorded the number of type 2 DM patients at 27,075, of which the total number of patients aged > 55 years amounted to 85% and of the total, 70% were women from all patients spread across 39 community health centers in the city. Medan. From this data, it can be seen that type 2 DM in North Sumatra is relatively high (Nuryatno, 2019) .

According to the International Diabetes Federation (IDF), type 2 DM is a serious health problem today. Every year, the number of people suffering from type 2 DM continues to increase and this has an impact on increasing health problems if sufferers experience complications. More than 90% of diabetes sufferers have type 2 DM (Decroli, 2019) .

Diabetes Mellitus (DM) is a disease where high blood glucose levels are caused by the pancreas failing to produce insulin or insulin resistance (Fera, 2019) . One of the chronic microvascular complications that occurs in type 2 DM patients is diabetic nephropathy, which is a condition where the kidneys experience decreased function and damage to the blood filter membrane is caused by high blood sugar levels. Diabetic Nephropathy is a complication of diabetes mellitus in the kidneys which can end in kidney failure. Kidney disease (nephropathy) is the main cause of death and disability in DM. The function of the kidneys is to regulate water balance, salt concentration in the blood, blood acid balance, as well as the excretion of waste materials and excess salt. The kidneys also play a role in removing metabolic waste such as urea, creatinine, uric acid and foreign chemicals (Basuki, 2023) .

The longer a person suffers from type 2 DM, the higher the risk of kidney failure, where complications of kidney failure are often found in type 2 DM sufferers for more than five years so that it can indirectly damage the kidneys in the long term (Tiska, 2023). Based on the description above, this study aims to determine the description of kidney function in type 2 diabetes mellitus patients by looking at the glomerular filtration rate from medical record data of type 2 DM patients at RSU Royal Prima Medan.

METHOD

This type of research is descriptive observational research, descriptive research is research carried out to determine the value of independent variables, either one or more variables without making comparisons, or connecting them with other variables, while the main aim of descriptive research is to systematically describe the facts and characteristics of objects or the subject studied appropriately (Sugiyono, 2019). Study carried out at RSU Royal Prima Medan which is located at Jl. Father No. 68A, Sei Putih Tengah, Kec . Medan Petisah , Medan City, North Sumatra 2018. Data analysis in research This use analysis Univariate ,

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with use application SPSS Version 25 statistics , after the data has been processed , next done data analysis with calculation proportion characteristics based on variables used (Sugiyono , 2019).

RESULTS AND DISCUSSION

Univariate Test Results

Frequency Distribution of Respondent Characteristics Based on Age

The following are the results of the frequency distribution of characteristics of Type 2 DM patients at RSU Royal Prima Medan based on patient age for the period January – December 2022.

Table 3. Distribution of Patient Characteristics Based on Age for the Period January – December 2022

Age	n	%
35 – 45 Years	2	5.9
> 45 Years	32	94.1
Total	34	100

Table 3 explains the results regarding the distribution of characteristics of Type 2 DM patients at RSU Royal Prima Medan based on age for the period January – December 2022. There are 2 patients aged 35 – 45 years with a percentage of 5.9% and patients aged > 45 years as many as 32 patients with a percentage of 94.1% of the total 34 patients in this study. From these results it can be seen that the majority of Type 2 DM patients at RSU Royal Prima Medan are > 45 years old. The results of this study are in line with research conducted by Susilawati (2021) whose results show that those aged ≥45 years have a greater risk of developing Type 2 DM compared to people aged less than 45 years.

Frequency Distribution of Respondent Characteristics Based on Gender

The following are the results of the frequency distribution of characteristics of Type 2 DM patients at RSU Royal Prima Medan based on patient gender for the period January – December 2022.

Table 4. Distribution of Patient Characteristics Based on Patient Gender for the Period January – December 2022

Gender	n	%
Man	18	52.9
Woman	16	47.1
Total	34	100

Table 4 explains the results regarding the distribution of characteristics of Type 2 DM patients at RSU Royal Prima Medan based on gender for the period January – December 2022. There were 18 patients with male gender with a percentage of 52.9% and patients with female gender. as many as 16 patients with a percentage of 47.1% of the total 34 patients in this study. From these results it can be seen that the majority of Type 2 DM

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patients at RSU Royal Prima Medan are male. The results of this study are in line with research conducted by Noviyanti (2019) which stated that men are more affected by type 2 DM.

Frequency Distribution of Respondent Characteristics Based on Length of Suffering

The following are the results of the frequency distribution of the characteristics of Type 2 DM patients at RSU Royal Prima Medan based on the length of time they have suffered from Type 2 DM for the period January – December 2022.

Table 5. Distribution of Patient Characteristics Based on Length of Suffering from Type 2 DM for the Period January – December 2022

Suffering from Type 2 DM for a long time	n	%
< 1 Year	1	2.9
15 years	10	29.4
> 5 Years	23	67.6
Total	34	100

Table 5 explains the results regarding the distribution of characteristics of Type 2 DM patients at RSU Royal Prima Medan based on the length of time they suffered from Type 2 DM for the period January – December 2022. There were 1 patients with a duration of suffering < 1 year with a percentage of 2.9%, patients with There were 10 patients with a long suffering period of 1 - 5 years with a percentage of 29.4%, and 23 patients with a long suffering period of > 5 years with a percentage of 67.6%, of the total Type 2 DM patients in this study were 34 patients. From these results, it can be seen that the majority of Type 2 DM patients at RSU Royal Prima Medan have been suffering from Type 2 DM for > 5 years. The results of this research are in line with research conducted by Adinda (2020) where the results show that the length of time people suffer from Type 2 DM is > 5 years.

Frequency Distribution of Respondent Characteristics Based on GFR Values of Type 2 DM Patients

The following are the results of the frequency distribution of characteristics of Type 2 DM patients at RSU Royal Prima Medan based on GFR values for the period January – December 2022.

Table 6. Distribution of Patient Characteristics Based on GFR Values for the Period January – December 2022

GFR value	n	%
Normal	2	5.9
Mild Drop	7	20.6
Moderate Decline	19	55.9
Weight Loss	2	5.9
Kidney failure	4	11.8
Total	34	100

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Table 6 explains the results regarding the distribution of characteristics of Type 2 DM patients at RSU Royal Prima Medan based on GFR values for the period January – December 2022. There were 2 patients with normal kidney function with a percentage of 5.9%, and there were 2 patients with mildly decreased kidney function. 7 patients with a percentage of 20.6%, 19 patients with moderately decreased kidney function with a percentage of 55.9%, 2 patients with severely decreased kidney function with a percentage of 5.9%, and patients with 4 patients had kidney failure with a percentage of 11.8%. From these results it can be seen that the majority of Type 2 DM patients at RSU Royal Prima Medan have kidney function in the moderately decreased category.

Description of Kidney Function in Type 2 DM Patients at RSU Royal Prima Medan based on Patient Age

The following are the results of a description of kidney function in Type 2 DM patients at RSU Royal Prima Medan based on the patient's age at the GFR value for the period January – December 2022.

Table 7. Description of Kidney Function in Type 2 DM Patients at RSU Royal Prima Medan Based on Patient Age at GFR Values for the Period January – December 2022

Patient Age	GFR value										Total	
	Normal		Light		Currently		Heavy		Kidney failure			
	n	%	n	%	n	%	n	%	n	%	n	%
36 - 45 Years	2	5.9	0	0	0	0	0	0	0	0	2	5.9
> 45 Years	0	0	7	20.6	19	55.9	2	5.9	4	11.8	32	94.1
Total	2	5.8	7	20.6	19	55.9	2	5.9	4	11.8	34	100

Table 7 explains the results regarding the description of kidney function in Type 2 DM patients at RSU Royal Prima Medan based on the patient's age in the GFR value for the period January – December 2022. There are 2 patients aged 36 - 45 years with GFR values in the normal category with a percentage of 5.9%, while there were 0 patients aged 36 - 45 years with mild, moderate, severe GFR and kidney failure category values with a percentage of 0%. Patients aged > 45 years with normal GFR category values were 0 patients with a percentage of 0%, patients aged > 45 years with mild GFR category values were 7 patients with a percentage of 20.6%, patients aged > 45 years with a moderate GFR category value there were 19 patients with a percentage of 55.9%, patients aged > 45 years with a severe GFR category value were 2 patients with a percentage of 5.9%, patients aged > 45 years with a GFR category value 4 patients had kidney failure with a percentage of 11.8%. The results of this research are in line with research conducted by Emy (2021) with the research title glycemic control and serum creatinine profile in type 2 DM Patients with chronic kidney disease. The results of the research showed that type 2 DM with chronic kidney failure was more common in people aged >44 years, 82 patients (98.8%) and 1 patient (1.2%) aged 18-44 years.

Jurnal eduHealt
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Description of Kidney Function in Type 2 DM Patients at RSU Royal Prima Medan based on Patient Gender

The following are the results of a description of kidney function in Type 2 DM patients at RSU Royal Prima Medan based on the patient's gender in the GFR value for the period January – December 2022.

Table 8. Description of Kidney Function in Type 2 DM Patients at RSU Royal Prima Medan Based on Patient Gender in GFR Values for the Period January – December 2022

Gender	GFR value										Total	
	Normal		Light		Currently		Heavy		Kidney failure			
	n	%	n	%	n	%	n	%	n	%	n	%
Man	2	5.9	4	11.8	9	26.5	2	5.9	1	2.9	18	52.9
Woman	0	0	3	8.8	10	29.5	0	0	3	8.8	16	47.1
Total	2	5.9	7	20.6	19	55.9	2	5.9	4	11.8	34	100

Table 8 explains the results regarding the description of kidney function in Type 2 DM patients at RSU Royal Prima Medan based on the patient's gender and the GFR value. There were 2 male patients with normal GFR category values with a percentage of 5.9%, 4 male patients with mild GFR category values with a percentage of 11.8%, 9 patients were male with a moderate GFR category value with a percentage of 26.5%, 2 patients were male with a severe GFR category value with a percentage of 5.9%, 1 patient with a GFR category value of kidney failure with a percentage of 2.9%. There are 0 patients who are female with a normal GFR category value with a percentage of 0%, female patients with a mild GFR category value as many as 3 patients with a percentage of 8.8%, female patients with a category value There were 10 patients with moderate GFR with a percentage of 29.5%, 0 patients with a female gender with a severe GFR category value with a percentage of 0%, female patients with a GFR category with kidney failure as many as 3 patients with percentage of 8.8%. The results of this research are in line with research conducted by Basuki (2023).

Description of Kidney Function in Type 2 DM Patients at RSU Royal Prima Medan based on the Length of Time the Patient Suffered from Type 2 DM

The following are the results of a description of kidney function in Type 2 DM patients at RSU Royal Prima Medan based on the length of time the patient suffered from Type 2 DM in the GFR value for the period January – December 2022.

Table 9. Description of Kidney Function in Type 2 DM Patients at RSU Royal Prima Medan Based on the Length of Time the Patient Suffered from Type 2 DM on GFR Values for the Period January – December 2022

How long the patient suffers from type 2 DM	GFR value										Total	
	Normal		Light		Currently		Heavy		Kidney failure			
	n	%	n	%	n	%	n	%	n	%	n	%
< 1 Year	1	2.9	0	0	0	0	0	0	0	0	1	2.9

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https://ejournal.seaninstitute.or.id/index.php/healt

How long the patient	GFR value										Total	
1-5 Years	1	2.9	4	11.8	5	14.7	0	0	0	0	10	29.4
> 5 Years	0	0	3	8.8	14	41.2	2	5.9	4	11.8	23	67.6
Total	2	5.9	7	20.6	19	55.9	2	5.9	4	11.8	34	100

Table 9 explains the results regarding the description of kidney function in Type 2 DM patients at RSU Royal Prima Medan based on the length of time the patient suffered from Type 2 DM in the GFR value for the period January – December 2022. Patients suffering from Type 2 DM < 1 year with normal GFR category values were as many as 1 patient with a percentage of 2.9%, patients suffering from Type 2 DM < 1 year with values in the GFR categories mild, moderate, severe and kidney failure as many as 0 patients with a percentage of 0. Patients suffering from Type 2 DM 1-5 years with a normal GFR category value of 1 patient with a percentage of 2.9%, patients suffering from Type 2 DM 1-5 years with a mild GFR category value of 4 patients with a percentage of 11.8%, patients suffering from Type 2 DM 2 1-5 years with moderate GFR category values were 5 patients with a percentage of 14.7%, patients suffering from Type 2 DM 1-5 years with severe GFR category values and kidney failure were 0 patients with a percentage of 0%. Patients suffering from Type 2 DM > 5 years with a normal GFR category value were 0 patients with a percentage of 0%, patients suffering from Type 2 DM > 5 years with a mild GFR category value were 3 patients with a percentage of 8.8%, There were 14 patients suffering from Type 2 DM > 5 years with moderate GFR category values with a percentage of 41.2%, patients suffering from Type 2 DM > 5 years with severe GFR category values were 2 patients with a percentage of 5.9 %. There were 4 patients suffering from Type 2 DM > 5 years with a GFR category value of kidney failure with a percentage of 11.8%. The results of this research are in line with research conducted by I Gusti (2017) with the title research on the description of serum creatinine in type 2 DM sufferers at RSU Sanglah Denpasar .

Discussion

Description of Kidney Function in Type 2 DM Patients at RSU Royal Prima Medan based on Patient Age

Research regarding the description of kidney function in Type 2 DM patients at RSU Royal Prima Medan based on patient age has been completed. The research results show that 2 patients aged 36 - 45 years with GFR values in the normal category with a percentage of 5.9% Meanwhile, there were 0 patients aged 36 - 45 years with mild, moderate, severe and renal failure GFR categories with a percentage of 0%. Patients aged > 45 years with normal GFR category values were 0 patients with a percentage of 0%, patients aged > 45 years with mild GFR category values were 7 patients with a percentage of 20.6%, patients aged > 45 years with a moderate GFR category value there were 19 patients with a percentage of 55.9%, patients aged > 45 years with a severe GFR category value were 2 patients with a percentage of 5.9%, patients aged > 45 years with a GFR category value 4 patients had kidney failure with a percentage of 11.8%.

The results of this research are in line with research conducted by Emy (2021) with the research title glycemic control and serum creatinine profile in type 2 DM Patients with

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chronic kidney disease. The results of the research showed that type 2 DM with chronic kidney failure was more common in people aged >44 years, 82 patients (98.8%) and 1 patient (1.2%) aged 18-44 years.

This is in accordance with the theory that age factors can influence creatinine levels, where creatinine levels in the elderly are much higher than in young people. High creatinine levels indicate that kidney function has begun to decline, which will lead to kidney failure. In addition, high creatinine levels are caused by Type 2 DM sufferers already experiencing complications of kidney failure. As a person ages, his kidney function will also decrease. This happens because at the age of more than 40 years, some nephrons will experience the process of losing, causing incomplete creatinine filtration so that creatinine levels in the blood increase. As age increases, combined with chronic diseases such as DM, the kidneys tend to become damaged due to high blood sugar levels and kidney function cannot be restored so that many DM sufferers experience complications of kidney failure (I Gusti, 2017) .

Increasing a person's age will also be followed by a decrease in kidney function, such as reducing filtration ability, thereby increasing serum creatinine. This risk will increase in patients suffering from DM, where one of the disease progressions from DM is chronic kidney failure which leads to chronic kidney failure (Emy, 2021) .

Description of Kidney Function in Type 2 DM Patients at RSU Royal Prima Medan based on Patient Gender

Research regarding the description of kidney function in Type 2 DM patients at RSU Royal Prima Medan based on the patient's gender has been completed. The results of the study show that 2 patients were male with normal GFR category values with a percentage of 5.9 %, 4 patients were male with mild GFR category values with a percentage of 11.8%, 9 male patients with moderate GFR category values were 9 patients with a percentage of 26.5%, There were 2 male patients with a severe GFR category value with a percentage of 5.9%, 1 male patient with a renal failure GFR category value with a percentage of 2.9%. There are 0 patients who are female with a normal GFR category value with a percentage of 0%, female patients with a mild GFR category value as many as 3 patients with a percentage of 8.8%, female patients with a category value There were 10 patients with moderate GFR with a percentage of 29.5%, 0 patients with a female gender with a severe GFR category value with a percentage of 0%, female patients with a GFR category with kidney failure as many as 3 patients with percentage of 8.8%.

The results of this research are in line with research conducted by Basuki (2023) with the title research on the description of creatinine and urea in diabetes mellitus sufferers. The results showed that 39 people with DM had high creatinine levels, dominated by 20 women (51.28%).

The relationship between blood creatinine and DM is that DM sufferers have high blood sugar levels or hyperglycemia, which in this condition causes blood vessel walls to become damaged, weak and brittle, resulting in blockages that cause microvascular complications, one of which is diabetic nephropathy. Hyperglycemia conditions also play a role in the formation of atherosclerosis. As a result, the lumen of the blood vessels narrows

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and the speed of blood flow decreases, which causes a reduction in blood supply to the kidneys. This can cause disruption of the filtration process in the glomerulus and a decrease in kidney function characterized by increased blood urea and creatinine levels (Basuki, 2023) .

Description of Kidney Function in Type 2 DM Patients at RSU Royal Prima Medan based on the Length of Time the Patient Suffered from Type 2 DM

Research regarding the description of kidney function in Type 2 DM patients at RSU Royal Prima Medan based on the length of time the patient suffered from Type 2 DM has been completed. The results of the study showed that 1 patient suffered from Type 2 DM < 1 year with normal GFR category values. the percentage is 2.9%, patients suffering from Type 2 DM < 1 year with a GFR category value of mild, moderate, severe and kidney failure are 0 patients with a percentage of 0. Patients suffering from Type 2 DM 1-5 years with a category value Normal GFR was 1 patient with a percentage of 2.9%, patients suffering from Type 2 DM 1-5 years with mild GFR category values were 4 patients with a percentage of 11.8%, patients suffering from Type 2 DM 1-5 years with moderate GFR category values as many as 5 patients with a percentage of 14.7%, patients suffering from Type 2 DM 1-5 years with severe GFR category values and kidney failure as many as 0 patients with a percentage of 0%. There are 0 patients suffering from Type 2 DM > 5 years with normal GFR category values with a percentage of 0%, 3 patients suffering from Type 2 DM > 5 years with mild GFR category values with a percentage of 8.8%, There were 14 patients suffering from Type 2 DM > 5 years with moderate GFR category values with a percentage of 41.2%, patients suffering from Type 2 DM > 5 years with severe GFR category values were 2 patients with a percentage of 5.9 %. There were 4 patients suffering from Type 2 DM > 5 years with a GFR category value of kidney failure with a percentage of 11.8%.

This research is in line with research conducted by I Gusti (2017) with the title research on the description of serum creatinine in Type 2 DM sufferers at the Sanglah Central General Hospital, Denpasar. The results of the research showed that serum creatinine levels in Type 2 DM sufferers at Sanglah Denpasar General Hospital based on length of suffering showed that high creatinine levels were more common in the group suffering from Type 2 DM for 6-10 years, namely 72.2%.

The longer the duration of DM, the higher the risk of terminal kidney failure, where complications of terminal kidney failure are often found in DM sufferers over a period of >5 years, namely 52.94%. In respondents who experienced diabetic nephropathy or kidney failure, the onset of DM which most often caused kidney complications was 5-10 years. Long-term diabetes causes changes in small blood vessels that can cause kidney damage, where kidney damage can cause severe kidney failure. Kidney damage can begin in the first year after being diagnosed with type I DM and can be discovered when type II DM is diagnosed. However, it takes around 5 – 10 years for significant kidney damage to develop (I Gusti, 2017) .

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CONCLUSION

An overview of the frequency distribution of Type 2 DM at RSU Royal Prima based on age showed that patients aged 35 - 45 years were 5.9% and those aged > 45 years were 94.1%. An overview of the frequency distribution of Type 2 DM at RSU Royal Prima based on gender was found to be 52.9% male and 47.1% female. An overview of the frequency distribution of Type 2 DM at RSU Royal Prima based on the duration of suffering from Type 2 DM found that patients with a duration of suffering < 1 year were 2.9%, patients with a duration of suffering of 1 - 5 years were 29.4% and patients with a duration of suffering > 5 year as much as 67.6%. Description of the presentation of Type 2 DM Kidney Function based on the age of 34 patients. The majority of GFR values were in the moderately decreased GFR category for patients aged > 45 years, 19 (55.9%) of them. Description of the presentation of Type 2 DM Kidney Function based on gender, the GFR value in patients based on gender of the 34 patients, the majority of whom were in the moderately decreased GFR category in patients with female gender, 10 (29.5%) patients. Description of the presentation of Kidney Function for Type 2 DM based on the length of time they have suffered from Type 2 DM, the GFR value in patients based on the length of time they have suffered from Type 2 DM. Of the 34 patients, the majority were in the GFR category value of moderate decline in patients with a duration of suffering from DM > 5 years, 19 (55, 9%) patients .

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