

Characteristic of Hemodialysis Patient With Vascular Access (Fistula A-V) In Saiful Anwar Hospital During Januari 2014 – July 2017 Period

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Background

The incidence of patient with last stage chronic kidney failure tends to increase. Hemodialysis has been accepted as a method of treatment in patients with stage 5 chronic kidney failure. The ideal vascular access for hemodialysis is the access that can facilitate adequate dialysis, perfect patency rates, few complications, and easily made. A-V fistula is the vascular access closest to ideal, thereby reducing the morbidity and mortality of patient with chronic kidney failure.

Method

It is a retrospective study. Data were obtained from the A-V fistula operating form archive in the Vascular and Endovascular Divisions of the Department of Surgery FKUB-RSSA from January 2014-July 2017 and from the patient's medical record. Data processing is done with SPSS 16.0.

Result

Of the total 355 subjects studied, 51.5% are male patients while women are 48.4%. In the age category <40 years there were 68 people (19.1%) aged 40-60 years old 235 people (72%) age > 60 years 28 people (14.6%). The main causes of renal failure are hypertension (49%), diabetes mellitus (15.7%), kidney stones (10.70%), genetic (6.7%), autoimmune (4.5%) and other causes (12.67%). Other risk factors that accompany the main causes are heart disease (52%), hypercholesterolaemia (24%), and old age (23%). The first location of AV shunt was the left wrist (52.9%), left cubiti (40%), right wrist (7.04%). Then on the second AV shunt formation, the most common AV shunt locations are right cubiti (36%), right wrist (27%), left cubiti (9.57%), left wrist (9.1%) and others (18%). (69.6%) patients did not use double lumen, the rest wear double lumen. Most double lumen sites were jugular (45.9%), subclavian (43%) and others (21%). AV Shunt mounting are done by vascular surgery consultant (37.8%) and (62.2%) by general surgical resident.

Conclusion

Various conditions and complications of the disease can affect the AV-Shunt both before and after surgery therefore the hemodialysis nurse plays an important role ranging from suggesting and motivating patients to do AV-Shunt, providing adequate information about AV-Shunt, overcoming and observing the various complications during the use of AV -Shunt and maintaining the AV-Shunt as long as it is used.

Keywords: last stage of chronic kidney failure, vascular access for hemodialysis, fistula A-V

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I. INTRODUCTION

Together with the increasing incidence of Chronic Renal Failure, the need for venous access for hemodialysis are also getting higher, especially in aging population. Data from the U.S. Renal Data System in 2005 indicated that more than 106.000 new patients began treatment for endstage renal disease, and that approximately 341.000 patients were receiving dialysis.¹ Data in 2012, the number of kidney failure patients in Indonesia about 150.000 people, and about 10.000 patients were undergoing to hemodialysis.¹⁰ To ensure adequate haemodialysis treatments, a well-functioning vascular access (VA) is a prerequisite in dialysis patients.²

It is necessary to make vascular access which enables the hemodialysis process to be performed. There are two kinds of vascular access to hemodialysis. Long term vascular access is sometimes referred to as permanent vascular access and temporary vascular access using a venous catheter. Long term use of this vascular access can cause problems such as pseudoaneurism or false aneurysms.²

The various conditions and complications of the disease can affect the AV-Shunt both before and after surgery, therefore the nurse hemodialysis plays an important role ranging from suggesting and motivating patients to AV-Shunt, providing adequate information about AV-Shunt, overcoming and observing the sharing of complications during the use of AV -Shunt and of course maintain AV-Shunt as long as AV-Shunt is used. This study aims to determine the characteristics haemodialysis patients with vascular access (Fistula A-V) at Saiful Anwar Hospital in January 2014 – July 2017.

II. MATERIALS AND METHOD

This study is a Retrospective study. The population in this study were all patients treated in the Vascular and Endovascular Divisions of the Department of Surgery Saiful Anwar Hospital January 2014 - July 2017. Number of samples are 355 patients, with the inclusion criteria, patients who had hemodialysis vascular access installed. Exclusion criteria are patients with complications before the installation of hemodialysis vascular access. Data is taken from the patient's medical records patients at Saiful Anwar Hospital in January 2014 – July 2017. Data processing was performed with SPSS 16.0.

III. RESULT

In this study there are 355 respondents who had hemodialysis vascular access installed. All patients treated in the Vascular and Endovascular Divisions of the Department of Surgery Saiful Anwar Hospital January 2014 - July 2017. Below is a table of respondent characteristics based on gender and age in patients.

Table 1. Characteristics of Respondents Based on Gender and Age in Pseudoaneurysm Patients with Installed Hemodialysis Vascular Access in Saiful Anwar Hospital at January 2014 - July 2017.

Characteristics of respondents	Frequency	(%)
Gender		
Male	183	51,5%
Female	172	48,4%
Age (years)		
<40		
40-60	68	19.1%
>60	235	72%
	28	14.6%

Based on Table 1. There is a slightly higher number of male respondent in this study 51,5% compare to 48,4%. Based on the age group , more than half of the study population is at the age range of 40-60 years (72%)

Table 2. Frequency Distribution the risk factor of Renal Failure

Risk Factor of Renal failure	Frequency	(%)
Hypertension	174	49%
Diabetes Mellitus	56	15,7%
Kidney Stones	39	10,7%
Genetic	24	6,7%
Autoimmune	17	4,5%
Other	45	12,67%

Based on Table 2. The main causes of renal failure are Hypertension (49%), diabetes mellitus (15,7%), kidney stones (10.7%), genetic (6.7%), autoimmune (4.5%), and other (12,67%)

Table 3. Frequency of body part location to be used as first time AV Shunt installation

Body part	Frequency	(%)
Left wrist	188	52.9
Left cubiti	142	40
Right wrist	25	7.04

Table 3 discuss the common body location to be used as first time AV Shunt installation. The most common is left wrist (52.9%) followed with left cubiti (40%), and right wrist (7.04%).

Table 4. Frequency of body part location to be used as second time AV Shunt installation

Body part	Frequency	(%)
Right cubiti	128	36
Right wrist	97	27
Left cubiti	34	9.57
Left wrist	32	9.1
Others	64	18

Table 4 presents the common body location to be used as second time AV Shunt installation. The most common is right cubiti (36%) followed with right wrist (27%), left cubiti (9.57%), left wrist (9.1%), and others (18%).

Table 5. Frequency and location of double lumen used

Double lumen	Frequency	(%)
Non User	247	69.6
User	108	30.4
- Jugular	50	45.9
- Subclavian	46	43
- others	23	21

From table 5 above we can conclude that most respondents do not use double lumen (69.6%) while for double lumen user the most common site of installation are jugular (45.9%) followed with subclavian (43%), and others (21%).

Table 6. Operator of AV shunt installation

Operator	Frequency	(%)
Vascular surgeon	134	37.8
General surgery residents	221	62.2

Based on the data from table 6, we can conclude that AV shunt installation is mostly done by general surgery resident (62.2%) rather than done by the vascular surgeon (37.8%).

IV. DISCUSSION

Chronic renal failure is a decline of renal function that progressive and permanent which can be caused by various kinds of disease. Diabetes mellitus is one of the most common diseases cause terminal renal failure, followed by hypertension.⁹ To ensure adequate haemodialysis treatments, a well-functioning vascular access (VA) is a prerequisite in dialysis patients.² Vascular access allows the blood to flow in large quantities and continuously into the machine during the hemodialysis process. In normal venous blood vessels it is unlikely that this happens because the blood vessels will collapse when blood is drawn through the machine. It is necessary to make vascular access which enables the hemodialysis process to be performed. Long term use of this vascular access can cause problems such as pseudoaneurism or false aneurysms.²

Based on the the patient's medical records in the Vascular and Endovascular Divisions of the Department of Surgery Saiful Anwar Hospital January 2014 - July 2017, there is a slightly higher male respondent than female (51.5% to 48%) , gender is one of the risk factors which cannot be modified.⁸ Based on the age group, most patients are at range of 40-60 years (72%), this range age belongs to the elderly category. The old age became one of the independent predictors of increased risk of bleeding or complications vascular.⁸

CONCLUSION

Various conditions and complications of the disease can affect the AV-Shunt both before and after surgery therefore the hemodialysis nurse plays an important role ranging from suggesting and motivating patients to do AV-Shunt, providing adequate information about AV-Shunt, overcoming and observing the various complications during the use of AV -Shunt and maintaining the AV-Shunt as long as it is used.

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