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Prescription Pattern for Hypertension Patients With Kidney Failure Complication in Dr. Sam Ratulangi Tondano General Hospital

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ABSTRACT

Hypertension is one of the 10 most common diseases in Dr. Sam Ratulangi Tondano General Hospital. Among hypertension patients there are complications of kidney failure so that the administration of antihypertension drugs must be adjusted to the patient's condition. This study aimed to determine the treatment of hypertension patients with kidney failure complication in Dr. Sam Ratulangi Tondano General Hospital. This was a descriptive study. The sample in this study were all hypertension patients with kidney failure complication in Dr. Sam Ratulangi Tondano General Hospital both inpatients and outpatients registered in the register book during July-December 2018. The data collected was then processed and analyzed descriptively then presented using tables and narrated. The results showed that the prescription for hypertension patients with kidney failure complication in Dr. Sam Ratulangi Tondano General Hospital using antihypertension drugs group of ARB, ACEI, CCB and diuretics. The most prescribed antihypertension drugs were ARB drugs with a percentage of 52.08% and the most prescribed drug was Telmisartan with a percentage of 27.083%. The prescription used single drug (39,29%) and combination drugs (60.71%), the most single drug used was the ARB drugs group (33.93%) and the most of combination drugs used were ARB and diuretics (30.36%).

Keywords: Prescription pattern, hypertension, kidney failure complication

INTRODUCTION

Medication is an important factor in health care, because it is efficacious to cure disease, alleviate or prevent disease [1]. Antihypertension drugs have an elimination pathway through the kidneys. In the condition of kidney failure, antihypertension drugs can cause buildup in the kidneys so that it can worsen kidney function. Therefore, special attention and treatment is needed, especially the selection of antihypertension drugs that are safe for the kidneys.

Drug groups of ACE inhibitors (Angiotensin-Converting Enzyme) and ARB (Angiotensin II Receptor Blocker) or a combination of both that can reduce blood pressure and reduce intra-glomerular pressure [2]. The use of analgesic drugs and chronic drugs both freely and prescribed by doctors for years can trigger the risk of papillary necrosis and kidney failure [3].

Kidney failure is a condition where there is a decrease in kidney function due to damage from the renal parenchyma that is chronic and irreversible. Chronic kidney failure occurs when the glomerular filtration rate (LFG) is less than 60 ml / min / 1.73 m² for three months or more. Various factors that affect the speed of damage and decreased kidney function can originate from genetic, behavioral, environmental or degenerative processes. Factors thought to be related to an increased incidence of kidney failure include smoking, hypertension and energy supplement drinks [3].

Dr. Sam Ratulangi Tondano General Hospital is a health service facility in Minahasa Regency. Hypertension is one of the 10 most common illnesses suffered by patients in Dr. Sam Ratulangi Tondano General Hospital. There are hypertension patients with kidney failure complication who are given drugs such as ACEI, CCB, ARB and diuretics. This study aimed to determine the prescription pattern for hypertension patients with kidney failure complication in Dr. Sam Ratulangi Tondano.

MATERIAL AND METHODS

This was a descriptive research. The study was conducted at Dr. Sam Ratulangi Tondano General Hospital. The population in this study were all hypertension patients with kidney failure complication in Dr. Sam Ratulangi Tondano General Hospital both inpatients and outpatients registered in the register book during July-December 2018 with aged 18-85 years. The instrument used in this study was secondary data in the form of medical record Dr. Sam Ratulangi Tondano General Hospital during July-December 2018. The collected data was processed and analyzed descriptively then presented using a table, calculated as a percentage and then narrated.

RESULTS

During the period July-December 2018 there were 132 hypertension patients, but only 56 patients met the study criteria. Data on patient characteristics and the percentage of drugs prescribed can be seen in tables 1, 2 and 3 below.

Table 1. Characteristics of Patients by Gender and Age

Characteristics	Number of Patients	Percentage (%)
Gender :		
1. Male	32	57
2. Female	24	43
Age :		
18-45	1	1,79
46-55	15	26,79
56-65	20	35,71
66-85	20	35,71

Tabel 2. Percentage of Prescribed Antihypertension Drugs

Drug Groups	Drug Name	Number of Patients	Percentage (%)
<i>Angiotensin converting enzyme inhibitor (ACEI)</i>	Captopril	1	1,04
	Lisinopril	1	1,04
	Ramipril	1	1,04
	Total	3	3,12
<i>Angjostensin receptor blocker (ARB)</i>	Telmisartan	26	27,08
	Valsartan	3	3,13
	Candesartan	19	19,79
	Irbesartan	2	2,08
Total	50	52,08	
<i>Calcium chanel blocker (CCB)</i>	Amlodipin	18	18,76
	Total	18	18,76
Diuretics	Furosemid	22	22,92
	Spirololakton	3	3,13
	Total	25	26,05

Tabel 3. Prescription of Antihypertension Drugs

Prescription	Drug Groups	Number of Patients	Percentage (%)
Single Drug	ARB	19	33,93
	ACEI	2	3,57
	CCB	1	1,79
	Total	22	39,29
Combination Drugs	ARB & Diuretics	17	30,36
	ARB & CCB	8	14,29
	ARB, CCB & Diuretics	6	10,71
	CCB & Diuretics	2	3,57
	ACEI & Diuretics	1	1,79
	Total	34	60,71

DISCUSSION

Research on prescription pattern for hypertension patients with kidney failure complication in Dr. Sam Ratulangi Tondano General Hospital has been done. Hypertension is the most common disease suffered by patients. The results of the study in table 1 show that men suffer more hypertension than women, this is due to the behavior of smoking, alcohol and supplement drinks [3]. The age criteria of patients in table 1 show that most patients aged 56-85 years, it's due to the increasing age, decreased kidney function caused by a decrease in the rate of glomerular excretion and decreased tubular function in the kidney. In the elderly, kidney function and blood flow to the kidneys are reduced so that there is a decrease in glomerular filtration rate of about 30% compared to younger people [4].

Based on the prescribed drugs data in table 2, it can be seen that there are 4 groups of antihypertension drugs given, namely Angiotensin Converting Enzym Inhibitor (ACEI), Angiotensin Receptor Blocker (ARB), Calcium Channel Blocker (CCB) and diuretics. The most prescription hypertension drugs were ARB antihypertension drugs as much as 52.08%, followed by diuretic drugs as much as 26.04%, CCB as much as 18.75% and at least ACEI drugs as much as 3.13%. Administration of drugs in each patient was different in doses, where the dose adjustment was based on the severity of kidney failure [5].

There are two types of prescription of antihypertension drugs for hypertension patients with kidney failure complication i.e. single drug (39.29%) and combination drugs (60.71%) as seen in table 3. The most single drug used was ARB group (33.93%). The combination drugs consist of 2 and 3 drugs, the most of combination drugs used ARB and diuretics (30.36%). The goal of therapy is to retard the deterioration of kidney function and prevent cardiovascular disease. The fixed combination of antihypertension drugs includes ACEI & diuretics, ARB & diuretics, β -blocker & diuretics, diuretics & Ca-blocker, ACEI & Ca-antagonist. Since the use of antihypertension drugs causes water and sodium retention, it will overcome by the use of diuretics [6, 7].

ACEI and ARB drug groups have an effect on protecting the kidneys (renoprotective) in kidney disease. One of these drugs must be used as first-line therapy to control blood pressure and maintain kidney function in patients with chronic diseases [6]. The use of ARB drugs is usually recommended for patients who cannot respond to ACEI drugs properly. The ARB drugs have the fewest side effects compared to other drugs. This drug works by inhibiting the enzyme angiotensin II so that it can widen blood vessels and blood circulation and reduce blood pressure. ACEI drugs are the second line in hypertension therapy, its function to relax blood vessels and also help reduce the amount of fluid that is reabsorbed by the kidneys. This drugs are equal or more effective than diuretics for the elderly [8].

The use of diuretic drugs in hypertension patients is first line drug choice and intended to get rid of excess salt and water in the body so that fluid in the body decreases and blood pressure will drop [6]. The loop diuretics such as Furosemide is more effective than other diuretics. Side effects of the use of diuretic drugs are kidney failure, so patients with complications of kidney failure are not advised to use diuretics or their use under the supervision of a doctor. CCB drugs are as effective as ACEI in lowering blood pressure but not as effective as ACEI in preventing kidney failure caused by hypertension. The use in elderly patients causes side effects, so the use of low doses is often recommended [8, 9].

CONCLUSION

Based on the results of the study it can be concluded that prescription for hypertension patients with kidney failure complication in Dr. Sam Ratulangi Tondano General Hospital using antihypertension drugs group of ARB, ACEI, CCB and diuretics. The most prescribed antihypertension drug used was the ARB drugs group with a total percentage of 52.08% and the most prescribed was Telmisartan with a percentage of 27.083%. The prescription used single (39.29%) and combination drugs (60.71%), the most single drug used was the ARB drugs group (33.93%) and the most of combination drugs used were ARB and diuretics (30.36%).

SUGGESTION

1. The need for guideline of antihypertension therapy for antihypertension patients with kidney failure complication in Dr. Sam Ratulangi Tondano as a reference in the treatment of patients.
2. The doctors should pay more attention to the patient's condition to determine the number of drugs and group of antihypertension drugs given.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

SOURCE OF FUNDING

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ETHICAL CLEARANCE

Ethical certificate issued by Health Research Ethics Committee Manado Health Polytechnic Ministry of Health.

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