



The Influence of Hypertention and Lifestyle on the Incidence of Stroke in General Hospital Padangsidempuan

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ABSTRACT. Stroke is the leading cause of mortality and disability in the world-wide. Based on Basic Health research 2014 the prevalence of stroke was increased from 830 per 100,000 population in 2007 to 1,236 per 100,000 population in 2014. The purpose of this study was to determine the influence of hypertention, lifestyle (smoking consumption, physical activity and dietary) on the incidence of stroke in General Hospital of Padangsidempuan. This is an analytic observational with case control design. Case was stroke patients who treated in the hospital, they are 45 people and the control was 45 people who do not have stroke symptoms in surgery polyclinic in the general hospital at Padangsidempuan or 1: 1. Data was performed by using multiple logistic regression. The results revealed that dietary pattern were predictors of stroke incidence with the stroke equation was $-1,67 + 1.201$ dietary pattern. Population Attributable Risk (PAR) showed that 72.8% risk of stroke could be avoided if people have healthy dietary pattern. It was recommended that health professional should intensified health promotion regarding healthy dietary pattern.

Keywords: life style · hypertention · risk factors · stroke

1 Introduction

Currently the incidence of death, morbidity, and disability that occurs due to noncommunicable disease, including stroke, continues to grow in developing countries. The existence of a shift in lifestyle trends resulted in a shift in the incidence of stroke from old age to adulthood. Therefore, lifestyle modification is useful especially in the prevention of stroke events. Stroke is the leading cause of mortality and disability in the worldwide. Based on Basic Health research 2014 the prevalence of stroke was increased from 830 per 100,000 population in 2007 to 1,236 per 100,000 population in 2014 [2].

Riskesdas Kemenkes RI (2014), explained that the number of stroke patients based on the diagnosis of health workers (Nakes) is estimated as many as 1,236,825 people (7.0%), while those who still have symptoms of stroke is estimated as many as 2,137,941 people (12.1%). Increased prevalence Stroke is influenced by risk factors Stroke is closely related to unhealthy behavior, unhealthy dietary and unbalanced, lack of physical activity, smoking, overweight (obesity), hypertension, hypercholesterolemia and alcohol consumption [1]. RSUD Kota Padangsidimpuan is wrong one of the largest referral hospitals in Regency of Padangsidimpuan. Surveys at Padangsidimpuan Municipal General Hospital have an increasing number of stroke patients each year. In 2016 the number of stroke visits increased to 289 patients with a proportion of cases of 17.5%. Of the 132 stroke patients the number of male patients with women is more or less the same.

2 Material and Methods

This research used is observational analytic study with case control research design conducted at Sering health facility. The time of this study started from February to November 2017. Population consists of case population and control population, case population are all patients who come to visit outpatient and inpatient at General Hospital Padangsidimpaun in 2016 and control population are all patients who come to visit RSUD Kota Padangsidimpuan about health facility which often stated not suffering a stroke. The variables observed in this study were hypertension and lifestyle. Data analysis methods used include univariate, bivariate analysis using simple logistic regression and multivariate analysis using multiple logistic regression test [3].

3 Result

Data were analyzed univariate, bivariate, multivariate and the following results:

Variable	Incidence Stroke				Crude OR (95% CI)	p value
	Case		Control			
	n	%	n	%		
Dietary Pattern						
Not Good	30	66,7%	17	37,8%	3,324	< 0,008
Good	15	33,3%	28	62,2%	(1,361–8,119)	

The result of statistic test showed that there was an effect of dietary pattern to the incidence of stroke with $p = < 0.0008$ ($p < 0,05$) with OR of 3,324 (95% CI: 1,361–1,119), This means that patients who suffer a stroke have a risk of 3,324 times with poor eating habits compared to those who do not suffer a stroke.

Based on the results of model suitability tests conducted with several stages, the results show that there is no multikolineritas to the tested data viewed from VIF (Variance Inflation Factor) < 10 , Hosmer and Lameshow value is 0.702, test classification $> 50\%$ then obtained regression equation logistics as follows:

Variabel	B	Sig.	Exp(B)	95.0%	CI
				Lower	Upper
Diaetary	1.101	.0026	0.361	2.255	12.786
Constant	-1.931	.000	.145		

$$P = \frac{1}{1 + e^{-(a+b1X1+b2X2+b3X3+b4X4)}} \text{ Dimana } e = \text{bilangan natural yang besarnya } 2,718.$$

$$P = 0,70\% = 70\%$$

All variables with p value < 0.25 were then included as candidate models, so overall this model could explain hypertension and lifestyle against stroke events. The influence of independent variables on the dependent variable is 70% (overall percentage of 70%) while 30% is influenced by other factors. Variables that are very influential on the incidence of stroke is eating habits is known from the value of coefficient B.

Population attributable risk diet is 70% means can be explained that someone who has a good diet then the incidence of stroke can be avoided by 72,8%.

Population attributable risk dietary is 72,8% means that it can be explained that a person who has a good eating habits then the incidence of stroke can be avoided by 72,8%.

The Influence of Dietary Pattern to Incidence of Stroke

The result of bivariate analysis of variables of eating habits with stroke incidence in patients in RSUD Kota Padangsidempuan was found that the respondents whose eating habits were not good were more in the case group as many as 30 people (66.7%) and in the control group 17 people (37.8%). Respondents with good eating habits were more in the control group, 28 (62.2%) and in the case group were 15 (33.3%).

This study is in line with Perawaty et al. (2014), states that there is a significant relationship between diet with the incidence of stroke with p value = 0.012. The same study also shown by [4], got the result of analysis relationship of high fat and cholesterol food consumption with the incidence of stroke of young adult age, it is known that someone who always consume food high fat and cholesterol have risk equal to 6,655 times to stroke incidence of young adult age compared to someone who seldom consumes high fat and cholesterol [5].

In this study obtained various types of food consumed by stroke group. Types of foods high in fat and cholesterol are often consumed by respondents in the stroke group is bersantan food, fried foods, food flavoring, foods derived from chicken, beef, and mutton and eggs. Foods that contain high levels of fat and high cholesterol when consumed in excess will increase cholesterol levels in the blood. The higher the cholesterol the greater

the chances of cholesterol buried in the walls of blood vessels. This is what causes the blood vessel into a narrow channel that interfere with the blood supply to the brain.

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