

Prevalence of antiplatelet resistance in ischemic stroke patients: Is hypertension contribute to antiplatelet resistance?

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INTRODUCTION

Antiplatelet resistance correlate to ischemic vascular disease recurrence. The data about prevalence of antiplatelet resistance in Indonesia is limited. The determinant factor of antiplatelet resistance in Indonesia is debatable.

OBJECTIVE

This study aimed to identify the correlation of hypertension and antiplatelet resistance in ischemic stroke patients.

METHOD

This study was a cross sectional study, conducted at Bethesda Hospital, Yogyakarta, Indonesia. Subjects in this study were an ischemic stroke patients. The data obtained from electronic stroke register.

The inclusion criteria including: (i) age >18 years, (ii) male or female, (iii) had an ischemic stroke confirmed by neurological examination and brain imaging (CT Scan or MRI), and (iv) receiving antiplatelet therapy (aspirin 80 mg and/or clopidogrel 75 mg).

Venous blood was collected in a tube contain 3.2% natrium citrate. The sample was measured by using Verify Now analyzer. Aspirin resistance was defined as an ARU (aspirin reaction units) ≥ 550 and clopidogrel resistance was defined as P2Y12 ≥ 230 .

Univariate analysis used to determine the characteristics of the subjects. Chi square test, as a bivariat analysis, was performed to identify the significant factors in the incidence of antiplatelet resistance.

RESULTS

There were total of 83 subjects included in this study. The subjects dominated by male (75.9%), age >60 years (53%). More than 50% of the subjects had a recurrent stroke. The most common symptom was limb weakness (72.3%).

There were 5 stroke risk factors observed in this study : dyslipidemia, hypertension, ischemic heart disease, atrial fibrillation, and type 2 diabetes mellitus. Hypertension was the most common risk factor (60.2%).

Urinary tract infection, pneumonia, decubitus ulcer, and gastrointestinal bleeding were complications observed in this study. Only 7 subjects experienced a complication during hospitalization. Gastrointestinal bleeding was the most common complication (3.6%).

There were 71 subjects who underwent ARU test, 8 subjects who underwent P2Y12 test, and 4 subjects who underwent both tests. From 83 subjects, 25 (30.1%) among them were resistant to antiplatelet.

Further analysis was conducted to identify the determinant factors that influence antiplatelet resistance. Hypertension was not related to antiplatelet resistance ($p : 0.314$).

Table 1. Antiplatelet Resistance Tests

Tests	n	%
ARU	71	85.5
P2Y12	8	9.6
ARU + P2Y12	4	4.8

Table 2. Bivariate Analysis

Characteristics	Resistant	Normal	p	
Age	>60	17 (38.6)	27 (61.4)	0.072
Gender	Male	17 (27.0)	46 (73.0)	0.269
Stroke History	Recurrent Stroke	12 (31.6)	26 (68.4)	0.790
Stroke Symptoms	Limb Weakness	16 (63.9)	44 (75.9)	0.268
	Face Dropping	0 (0)	2 (100)	0.347
	Slurred Speech	7 (29.2)	17 (70.8)	0.904
Stroke Risk Factors	Aphasia	1 (25.0)	6 (75.0)	0.740
	Dyslipidemia	10 (23.8)	32 (76.2)	0.205
	Hypertension	13 (26.0)	37 (74.0)	0.314
	DM2	11 (35.5)	20 (64.5)	0.411
Complications	IHD	1 (25.0)	3 (75.0)	0.819
	AF	1 (33.3)	2 (66.7)	0.902
	UTI	0 (0)	1 (100)	0.509
	Pneumonia	0 (0)	1 (100)	0.509
Complications	Decubitus Ulcer	1 (50.0)	1 (50.0)	0.535
	GIT Bleeding	0 (0)	3 (100)	0.247

CONCLUSION

The incidence of anti platelet resistance in ischemic stroke patients is high. Hypertension is not related to antiplatelet resistance.