CERTIFICATE OF ATTENDANCE

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Beta Amyloid Plasma as Early Biomarker for Cognitive Impairment After Stroke

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BACKGROUND

Disability after stroke is even burdened by cognitive function impairment. Current diagnostic methods available now is not sensitive enough to detect early cognitive impairment after stroke. The level of beta-amyloid (Aβ) in the cerebrospinal fluid (CSF) can be used as a marker to detect cognitive impairment, but the CSF retrieval technique is invasive, so it is necessary to find biomarkers that are relatively easy, cheap and reliable. Therefore, biomarker that can be measured in plasma is needed. Aims to investigate the association of the plasma levels of beta amyloid with cognitive impairment after stroke.

METHODS

It is an observational study designed as cross-sectional study using 84 patients with ischemic stroke. Cognitive function was evaluated three months after stroke using MoCA-Ina test and measurement of plasma level of Aβ40 and Aβ42 within 72 hours of onset of stroke. Datas were analyzed using regression analysis to establish the most dominant factors related to the impaired cognitive function after stroke.

RESULTS

Table 1. Clinical Characteristic

	Impaired cognitive function	Normal cognitive function	p
Age (year)			
- ≥ 60	27	15	
- < 60	17	25	0.029
Education (year)			
- > 9	37	18	
- ≤ 9	7	22	< 0.001
Sex			
- Male	19	22	
- Female	25	18	0.279
Blood Pressure			
- Hipertension	38	6	
- Normotension	33	7	0.625
Glycemia			
- Hyperglycemia	7	7	

Table 2. The Association of Plasma Level of Aβ40 and Aβ42 with MoCA-Ina Assesment

	Impaired cognitive function	Normal cognitive function	p
Mean level of Aβ40	395.75 (9.6-565.7) pg	539.56 (285.69-1185.22) pg	<0.001*
Mean level of Aβ42	20.51 (0.9-66.04) pg	35.57 (0.26-88.19) pg	0.001*

*Mann Whitney Test

The association of the plasma level of Aβ40 and Aβ42 with cognitive function can be seen in Table 3 below Since each variable has no standard normal, the classification between low or high level was determined by calculating cut off point of each variable using the Receiver Operating Characteristic procedure (ROC), so that each variable can be grouped based on the value of the cut off the point. The high level was considered if the level obtained is higher then the cut off point and vise versa.

Table 3. The Association of Plasma Level of Aβ40 and Aβ42 with Cognitive Function

Variable	Cognitive function		p	OR
	Impaired n = 44	Normal n =40		
Low level Aβ40	24	3	<0.001*	14.80 (3.96- 55.28)
High level Aβ40	20	37		
Low level Aβ42	22	9	0.017*	3.44 (1.33 – 8.89)
High level Aβ42	22	31		

* Pearson Chi-Square

Table 4. Mutivariate Regression

	Variabel	Coefisien	p	OR
Step 1	Aβ40	2.597	< 0.001	13.43
	Aβ42	1.048	0.055	2.85

CONCLUSION

Low plasma level of Aβ40 is associated with the incidence of impaired cognitive function after stroke.

References

1. Seppala TT, Herukka SK, Hanninen T, et al. Plasma Aβ42 and Aβ40 as marker of cognitive in follow-up : a prospective, longitudinal, population-based cohort study. J Neurol Neurosurg Psychiatry 2010; doi: 10, 1136/jnnp
2. Schupf N, Tang MT, Fukuyama H, et al. Peripheral Aβ subspecies as risk biomarkers of Alzheimer's disease. PNAS September 2008; 16, vol. 105 no. 37 14052 – 1405