Abstract

THE ASSOCIATION OF MOTOR DYSFUNCTION AND HYPERTENSION, IL-6, TNF-A, NITRIC OXIDE AND GLUTAMATE

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Background and Purpose:

The brain is one of the main targets hypertension. However, little is known about the association hypertension to motor dysfunction. Also the association interleukin-6 (IL-6), TNF-α, nitric oxide and glutamate to motor dysfunction is still controversion. The purpose of this study is to measure the association motor dysfunction to hypertension and relate to interleukin-6 (IL-6), TNF-α, nitric oxide and glutamate

Methods:

A case-control study was conducted to measure the association motor dysfunction with hypertension and the IL-6, TNF-α, nitric oxide and glutamate, in which the subjects with motor dysfunction as case groups (99 cases) and the subject without motor dysfunction as control groups (99 controls). Assessment of motor function using Purdue Pegboard Test. Individuals with motor function who were visit the 6 health centres and the population in 6 villages in the city of Padang. Data collecting was conducted from August 2009 until December 2010. Measure the blood pressure and laboratory tests was performed to measure the levels of IL-6, TNF-α, nitric oxide, and glutamate. Logistic regression was used to estimate the association, motor dysfunction to hypertension, the IL-6, TNF-α, nitric oxide and glutamate.

Results:

Univariate analysis, it was found a significant association hypertension to motor disfunction, with $p < 0.001$ and odds ratio = 10.00 (95% CI = 4.76 to 20.99). IL-6 and TNF- α did not find any significantly associatiated to motor disfunction. The nitric oxide (NO) level was found a significantly associated to motor dysfunction, with $p < 0.001$ and odds ratio of to 8.3, and also was found that high levels of glutamate a significantly associated to motor dysfunction with $p < 0, 001$ and odds ratio = 5.304.

Multivariate analysis were found that hypertension was significantly associated with motor function (Exp (B) = 4.000, p= 95% CI (1.59 to 10.064), < 0.005) and nitric oxide was significantly related to motor function (Exp B) = 3.750 , 95% (from 1.679 to 8.375, p value <0.005)

Conclusion:

Hypertension and nitric oxide were associated to motor disfunction

Key Words: hypertension, nitric oxide, motor dysfunction