

## Kadar homositis total dan nitric oxide plasma pada anak dari penderita stroke iskemik = Plasma total homocysteine and nitric oxide level of-the children of ischemic stroke patients

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### Abstrak

A number of investigations reported that hyperhomocysteinemia (hHcy) is a risk factor for vascular diseases. Some casecontrol studies find that total homocysteine (tHcy) level is higher among stroke ischemic patients. if hHcy in stroke ischemic patients is due to genetic defect, their children may inherit that. And if the causes are nutritional deficiencies or lifestyle determinants, their children may have that also. So, it may be expected that hHcy is more prevalent among the children of stroke ischemic patients. The role of Hcy in vascular disease has been investigated in many studies. One of vascular phenotypes observed in hHcy is endothelial dysfunction, manifested by decreased bioavailability of endothelium derived nitric oxide (NO). Hypertension, hypercholesterolemia, diabetes mellitus, and smoking can also decrease NO released from endothelial cells. The aim of this study was to find proportion of hHcy, and the pattern of NO level among the children of stroke ischemic patients. In addition, we examined the relationship between plasma tHcy, hypertension, LDL-cholesterol, and HbA1c with NO production, by measuring nitrate-nitrite (NOx) level, as its metabolites. This cross sectional study includes 86 children of stroke ischemic patients, who fulfilled study criteria. The proportion of hHcy is in the range of 11,6 } 6,9%. The NOx level of 40 subjects which are randomly selected from the 86 subjects, have the median of 80,99  $\mu$ M (42,9 - 226,8 1.M). There is no significant relationship between plasma tHcy with NOx level ( $r = 0,220$ ,  $p = 0,086$ ). There is no significant relationship between systolic, and diastolic blood pressure, LDL-cholesterol, HbA1c, and history of hypertension with plasma NOx level ( $r = 0,073$  ;  $p = 0,327$ ,  $r = 0,220$ ,  $p = 0,086$ ,  $r = -0,207$  ;  $p = 0,100$ ,  $r = 0,261$  ;  $p = 0,052$  dan  $r = 0,119$ ,  $p = 0,233$ ). The NOx level of subjects with hHcy, history of hypertension, elevated systolic, diastolic blood pressure, and high LDL-cholesterol level tends to be higher than the subjects with Hcy level  $< 15 \mu$ M, Without hypertension history, normotensive, and subjects with normal LDL-cholesterol level.