

DEHYDRATION IS ASSOCIATED WITH MORE SEVERE ISCHEMIC STROKE ON HOSPITAL ADMISSION



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Background and Aim: Dehydration in acute ischemic stroke may worsen neurological deficits due to the reduction of cerebral blood flow and extension of infarct volume. Although there is no gold standard for assessing dehydration, high plasma BUN (Blood Urea Nitrogen)/creatinine ratio is widely used as dehydration marker in clinical settings. This study investigates the association between dehydration and stroke ischemic severity on hospital admission.

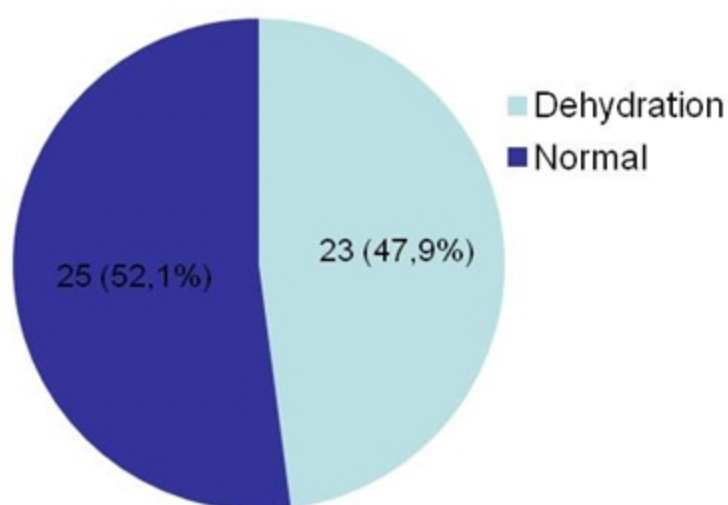
Method: This is a cross-sectional study, 48 acute ischemic stroke subjects who admitted at Dr. Sardjito Hospital Yogyakarta on April 2018 - September 2018 were eligible. BUN, creatinine level and stroke severity were measured at the time of admission. We defined dehydration if plasma BUN/creatinine ratio ≥ 15 . Stroke severity was assessed using NIHSS (National Institutes of Health Stroke Scale). Clinical data were analyzed using univariate and multivariate statistical analysis.

Results: Twenty three (47.9%) subjects were dehydrated and 25 (52.1%) subjects were non-dehydrated on hospital admission. Dehydrated subjects is associated with higher NIHSS score on admission than non-dehydrated ($9,39 \pm 1,8$ vs. $2,96 \pm 0,34$, $p = 0.001$, 95% CI [2.4-10.4]). Multivariate linear regression showed that dehydration is independently associated with NIHSS score on admission ($p = 0,041$).

Bivariate Analysis

Hydration Status	NIHSS	95% CI	p
Dehydration	$9,39 \pm 1,8$	2,4-10,4	0,001
Normal	$2,96 \pm 0,34$		

Hydration Status



Multivariate Analysis

Variable	B	p
Dehydration	-0,252	0,041*
Atrial fibrillation	-0,074	0,561
Sex	0,018	0,895
Blood Pressure	-0,139	0,236
Infection	0,134	0,299
Age	0,158	0,185
LDL	-0,175	0,115
ASPECT score	-0,534	<0,001

Conclusion: Dehydration is associated with more severe ischemic stroke on hospital admission.

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