

RELATIONSHIP BETWEEN HEMOGLOBIN A1c AND ISCHEMIC STROKE AMONG PATIENTS WITH TYPE-2 DIABETES

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Abstract. Ischemic stroke (IS) is a major cause of morbidity and mortality among patients with diabetes mellitus. In this study we aimed to determine the association between hemoglobin A1c (HBA1c) levels and the IS occurrence among Thai patients with diabetes mellitus type 2 (DM2) in order to reduce the risk for stroke among this group of patients. A hospital based case-control study was conducted among subjects with DM2 who attended the Bhuddasothorn Hospital, Chachoengsao, Thailand with 100 cases and 300 controls during 2013-2016. Cases were defined as patients with DM2 who had an IS and diagnosed by neurologists and computer tomography scan (CT scan) during the study period. Controls were patients with DM2 who did not have IS. Cases ($n=100$) and controls ($n=300$) were matched by gender, age (± 5 years), residential area, and length of time attending the study hospital. Data were collected using questionnaire comprising demographic characteristics, and medical data. The collected data were analyzed using descriptive statistics and analytic statistics. The mean [\pm standard deviation (SD)] age of subjects was 66.9 (± 11.1) years. Sixty-eight percent of subjects were females. The mean (\pm SD) HBA1c levels among cases was 9.10 (± 2.11)% and among controls was 7.52 (± 1.48)%. Multivariable conditional logistic regression was applied to estimate the effect of HBA1c on IS among DM2, revealed a HBA1c of 8-8.9 % and higher increased the risk of IS by a factor of 7.9 and 10.9 times, respectively (OR=7.9, 95%CI: 3.0-20.9; OR=10.9, 95%CI: 4.3-27.9). In summary, we found a significant positive association between HBA1c level and IS. A stroke surveillance system among patients with DM2 should be conducted in cooperation with knowledge sharing regarding glycemic control and stroke prevention as an essential measure to prevent developing IS risk.

Keywords: HBA1c, ischemic stroke, type-2 diabetes

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