

Higher Glycated Hemoglobin Level Is Associated with Increased Risk for Ischemic Stroke in Non-Diabetic Korean Male Adults (*Diabetes Metab J* 2011;35:551-7)

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We appreciate the interest and comments on our study, “Higher glycated hemoglobin level is associated with increased risk for ischemic stroke in non-diabetic Korean male adults,” which was published in *Diabetes & Metabolism Journal* 2011;35:551-7. We have responded to the questions below.

In our study, we excluded patients with iron-deficiency anemia, end-stage renal disease, a history of alcohol abuse, persons older than 80 years, pregnant women, children, cancer patients, subjects without fasting blood glucose and HbA1c level data, patients with a history of diabetes or fasting blood glucose level ≥ 126 mg/dL and patients with cardioembolic ischemic stroke, or recurrent stroke. We analyzed the risk of ischemic stroke only in adult males because our aim was to determine if there were any gender differences considering the fact that HbA1c failed to predict cardiovascular disease in non-diabetic women in a previous report [1].

We also failed to show the usefulness of HbA1c as a predictor of ischemic stroke in non-diabetic Korean women. This result might be due to a lack of consideration for hormonal changes or hormonal replacement therapy in postmenopausal women. Recent studies reported that sex hormone and sex hormone-binding globulin, in addition to HbA1c, are associated with a risk of type 2 diabetes [2,3]. Because the women in our study were in their sixties, on average, most female subjects were postmenopausal and likely undergoing drastic hor-

monal changes, making it difficult to identify HbA1c as a predictor of ischemic stroke.

Although the smoking rate was significantly different between the control and the stroke patients, our results are reliable because we assessed the risk of ischemic stroke according to the HbA1c levels after adjusting for age, smoking, body mass index, high density lipoprotein cholesterol, low density lipoprotein cholesterol, systolic and diastolic blood pressure, and HbA1c quartile.

This was a cross-sectional study such that a definite relationship between HbA1c and ischemic stroke cannot be assumed. Further research in a more ethnically diverse group must be conducted to clarify this relationship. In spite of these limitations, the results of this study are meaningful in that this study was the first to report the association of increasing HbA1c with risk of ischemic stroke in non-diabetic Korean male adults. Our findings warrant future large-scale, long-term prospective cohort studies to evaluate the association between HbA1c and stroke morbidity.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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