Stroke in Diabetic Patients: Is It Really a Macrovascular Complication?

To the Editor:

We have read with interest the article by Wilcox et al,1 in which they demonstrated the positive effect of pioglitazone on stroke recurrence in patients with type 2 diabetes mellitus (DM). However, we would like to stress a particular concern regarding a basic concept in the difficult question of DM and stroke. In this study, as in other previous studies, stroke is considered a macrovascular event in diabetic patients, but is this statement true? Traditionally, retinopathy, neuropathy, and nephropathy have been designated microvascular complications of DM, and stroke, myocardial infarction and gangrene are termed macrovascular complications.2 However, we think it is time to change this commonly accepted concept.

The pathophysiology of cerebrovascular disease in patients with DM is not fully characterized, but both large and small blood vessels seem to be affected. Thus, the etiology of strokes in diabetics is frequently microvascular disease from fibrinoid necrosis, which causes small subcortical infarcts or lacunar strokes.3 Different studies have suggested that, though there is no doubt that diabetes is an important risk factor for ischemic stroke overall, the increase in relative risk must be similar for all subtypes of ischemic strokes. Most of the previous population-based studies have not suggested any hint of a particular association between DM and any subtype of ischemic stroke. Similar results have been obtained in a systematic review of all relevant hospital-based and population-based studies.3,4 Furthermore, in the Atherosclerosis Risk in Communities Study,5 a prospective study of 14 448 men and women, even the authors observed a positive association between lacunar strokes and diabetes, with a population-attributable fraction for DM of 26.3% for lacunar versus 11.3% for nonlacunar stroke. Finally, in a recent prospective study among 116 316 female registered nurses in a 24-year follow-up study, researchers found that the risk for large-artery infarction and lacunar stroke were similar in diabetic women.6

In conclusion, it may be too simplistic to consider stroke a macrovascular complication of DM, as long as both microvascular and macrovascular factors operate simultaneously and intensively in diabetics’ brain vascular damage. Given the significant public health impact of stroke and diabetes, further studies are required to identify all risk factors for vascular diabetic disease and apply appropriate preventive strategies.

Disclosures

None.

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