Association Between Metabolic Syndrome and Minimal Leukoaraiosis

To the Editor:

We read with interest the article by Bokura et al reporting the association of MetS with silent ischemic brain lesions, silent brain infarction (SBI), and leukoaraiosis (LA), as described previously. The association is very important for understanding of the role that MetS plays in preventing stroke and cognitive impairments because both SBI and LA are regarded as predictors for the clinical events. Our concern is that Bokura et al did not report the association for minimal LA. We have already reported the association between MetS and LA including minimal ‘dots’ of subcortical white matter (WM) diagnosed with T1-weighted, T2-weighted, and FLAIR images of MRI. In our study, MetS was significantly associated with minimal LA as well as non-minimal LA combining mild, moderate, and severe grades. Specifically, the adjusted OR for minimal LA (3.41; 95% CI, 2.30 to 5.06) was almost the same as that for nonminimal LA (3.07; 95% CI, 1.75 to 5.38). A few factors seem to contribute to the disagreement between 2 studies. First, our study population was younger than that they examined. Second, we may detect more accurately minimal LA with the combination of all 3 images of MRI than they did because they did not use FLAIR images. A combination of all 3 images including FLAIR was superior for detection of LA compared to that of T1-weighted and T2-weighted images. An autopsy study on brains from subjects with LA showed that the cerebral microvascular density decreased not only in the LA lesions but also in the healthy-appearing WM lesions. Although the underlying microvascular atherosclerosis responsible for LA affects the entire brain, the threshold to detect LA lesions seems to differ by whether FLAIR images are considered. Minimal LA may show the earliest token on radiological images of generalized atherosclerotic changes caused by MetS. We would like to emphasize the significance of minimal LA existence in apparently healthy people with MetS because minimal LA may be regarded as the first stage of MetS-associated organ damages.

Disclosures

None.

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