Letter by Huijts et al Regarding Article, “Cerebral Microbleeds and Cognition in Patients With Symptomatic Small Vessel Disease”

To the Editor:

With interest we read the article by Patel et al1 about the effect of cerebral microbleeds (CMBs) on several cognitive domains in patients with symptomatic cerebral small vessel disease. The purpose of the study was to determine associations between cognition and presence, number and location of CMBs, and whether associations were independent of other imaging markers of cerebral small vessel disease. A homogeneous group of patients with lacunar stroke with white matter lesions was included. The results showed that the number of CMBs was weakly related to executive function, but not to other cognitive domains. Strikingly, the relationship between CMBs and cognition has not been studied before in patients with lacunar stroke, so this study really adds to the existing literature. However, there are some issues we would like to bring to the authors’ attention.

One of the main purposes of the authors was to determine associations between CMBs and cognition independent of other imaging markers of cerebral small vessel disease. Consequently, they correctly adjusted for other markers, such as T2-lesion load, lacune count, brain volume, and DTI measures (fractional anisotropy and mean diffusivity). In contrast to what was found in a comparable study with a similar sample size,2 results were not longer significant. This was not emphasized and, instead of reporting negative results, analyses were shifted to the CMBs count in the top decile.

CMBs in the top decile were more strongly associated with executive function than those in the total sample and, as opposed to the former results, remained significant after adjusting for the other imaging markers. However, the distribution was rather skewed with a sample size of only 12 patients in the top decile, whereas 7 predictor variables were added in the third prediction model. The validity of the results might therefore be questioned.

Furthermore, based on the differences between the analyses on the total sample compared with those with the highest CMBs counts, the authors concluded that there seemed to be a threshold effect for the association between CMBs and executive function. To justify such a conclusion, it would have been interesting to know some more demographics of the patients in the top decile as well as more specific information on the location of the CMBs.

For example, as almost half of the total CMBs were cortically located, we wonder whether the patients in the top decile mainly had cortical or subcortical CMBs?

Finally, it is not clear how patients were recruited. Time from last stroke to testing ranged from 9 weeks to 37 years, and patients were recruited from stroke services of 3 hospitals. Yet, only 180 patients were screened. There must have been another exclusion or selection criterion, which might have led to the present sample of 116 patients.

In conclusion, this study adds to our knowledge on the relationship between CMBs and cognitive function in patients with lacunar stroke. However, in line with the purpose of the study, we feel that the emphasis of the results should have been on the negative results. Unfortunately, it is hard to publish negative findings and, as such, we might never know the real effects of CMBs on cognition in patients with cerebral small vessel disease.

Disclosures

None.

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Stroke. 2013;44:e69; originally published online April 16, 2013;
doi: 10.1161/STROKEAHA.113.001024

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