Editors' Note: In this week's WriteClick, Dr. Shang and authors Silvestrini et al. discuss the role of transcranial Doppler (TCD)-measured vasomotor reserve (VMR) in studying carotid stenosis and cerebral microcirculation. VMR evaluates the compensatory response of the cerebral small vessels (autoregulation) to a stimulus. Carbon dioxide or acetazolamide is used to stimulate vasodilation and then VMR is calculated from the measured change in blood velocity. Vessels already dilated from decreased perfusion pressure due to carotid stenosis have less capacity to react. VMR has been used to analyze syncope, predict autonomic dysfunction in Parkinson disease, and study circulation and autoregulation in migraine with aura, Alzheimer disease, and even altitude sickness.

Megan Alcauskas, MD, and Robert C. Griggs, MD

CEREBRAL HEMODYNAMICS AND COGNITIVE PERFORMANCE IN BILATERAL ASYMPTOMATIC CAROTID STENOSIS

Ty Shang, Dallas: Balucani et al.¹ reported on the correlation of asymptomatic carotid stenosis with cognitive impairment. The mechanism they proposed is hemodynamic compromise from carotid stenosis as measured by transcranial Doppler (TCD) vasomotor reserve (VMR). VMR is a measure of small-vessel reactivity. It is reasonable to expect that small vessels are dilated in the presence of large-artery stenosis so that VMR is exhausted, which is manifested as impaired VMR. However, VMR is also a measure of small-vessel function itself. In the presence of small-vessel disease without large-vessel stenosis, VMR is impaired as well. There have been several studies showing that VMR is impaired in people with white matter disease.² In the current study, did the authors compare small-vessel disease among each group with asymptomatic carotid stenosis by investigating white matter hyperintensity or lacunar infarct on MRI? Another useful parameter to study small-vessel disease is pulsatility index (PI) on TCD, which is high in small-vessel disease.³ Have the authors compared PI among each group? This information would be helpful in illustrating the mechanism of cognitive impairment in carotid stenosis as the contribution of

white matter disease to cognitive decline is well-known.

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Author Response: Mauro Silvestrini, Giovanna Viticchi, Lorenzo Falsetti, Ancona, Italy; Clotilde Balucani, New York: Silent cerebrovascular disease is a mounting public health problem with prognostic significance for cognitive decline and stroke.^{1,2} An association between silent infarctions and altered VMR has been described and deserves further investigation.³ Our study design did not include a neuroimaging evaluation; therefore, it was not possible to assess the presence of white matter lesions or silent infarctions and to correlate their occurrence with the cerebral hemodynamic status in our population. However, a functional derangement of the cerebral microcirculation ipsilateral to a severe carotid stenosis, as reflected by abnormal breath-holding index values, could play a pivotal role in cognitive dysfunction even in the absence of vascular lesions. This was reported in a previous study,⁴ which included only subjects with minimal parenchymal changes (grade 0 or 1 of Wahlund scale⁵). The supposed mechanism is a chronic hypoperfusion leading to an exhausted arteriolo-capillary vasodilatory capacity downstream to the carotid stenosis. As Dr. Shang mentioned, we included the PI. This analysis suggested the lack of any relevant anatomic impairment at the arteriolo-capillary level. PI values ranged from 0.80 to 1.1 and within the study groups there were nonsignificant differences.

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A COMPARISON OF TAU AND 14-3-3 PROTEIN IN THE DIAGNOSIS OF CREUTZFELDT-JAKOB DISEASE

Andre Karch, Inga Zerr, Göttingen, Germany:

Hamlin et al.¹ compared validities of 2 commonly used CSF tests for sporadic Creutzfeldt-Jakob disease (sCJD)—14-3-3 and total tau—and presented results contrary to previous studies.^{1–4} The present study is restricted to autopsy-confirmed cases, which seems reasonable, since neuropathology is the diagnostic gold standard in sCJD. However, using only autopsy-confirmed cases can also cause severe selection bias in a prospective setting, given that these tests are frequently requested in potentially treatable conditions.^{2,3} In the present study, clinicians were given results of 14-3-3 but not tau tests during the patient's lifetime. Autopsies were obtained in fewer than 10% of all initially referred patients. Thereby, decision about initiation of

postmortem autopsy was directly dependent on 14-3-3 but not tau results. It seems a fair assumption that patients with CJD and negative 14-3-3 as well as patients without CJD and positive 14-3-3 were more likely to be autopsied than patients with consistent clinical history and 14-3-3 test results. Thereby, specificity and sensitivity of 14-3-3 are underestimated in this study design, which could explain differences in 14-3-3 validity when compared to previous studies. A final decision on test accuracy of 14-3-3 and total tau needs careful assessment in a prospective, multicenter study using standardized protocols for laboratory, clinical, and pathologic data.⁵

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CORRECTIONS

Teaching *NeuroImages*: Basal ganglia involvement in facio-brachial dystonic seizures associated with LGI1 antibodies

In the article “Teaching *NeuroImages*: Basal ganglia involvement in facio-brachial dystonic seizures associated with LGI1 antibodies” by D. Plantone et al. (*Neurology*® 2013;80:e183–e184), figures 1 and 2 were transposed and should be reversed. The publisher regrets the error.

Severe congenital *RYR1*-associated myopathy: The expanding clinicopathologic and genetic spectrum

In the article “Severe congenital *RYR1*-associated myopathy: The expanding clinicopathologic and genetic spectrum” by D. Bharucha-Goebel et al. (*Neurology*® 2013;80:1584–1589), there is an error in the author list. The fourth author should have read Kristen Zukosky. The editorial staff regrets the error.

Author disclosures are available upon request (journal@neurology.org).

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Cerebral hemodynamics and cognitive performance in bilateral asymptomatic carotid stenosis

Ty Shang, Mauro Silvestrini, Giovanna Viticchi, et al.

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