

## Retinal and cerebral small vessel disease: Two sides of the same coin?

Kwa et al. prospectively studied a cohort of 179 patients with symptomatic atherosclerotic disease. They found a relation between pathologic changes in the retinal arteries and MRI signs of cerebral small vessel disease (i.e., white matter lesions and lacunes), both in hypertensive and normotensive patients.

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## Setting our sights on stroke prevention

Commentary by Curtis Benesch, MD, MPH

Two major factors limit our ability to reduce the risk of stroke. First, a gap exists between our understanding of effective risk reduction strategies for stroke and the optimal implementation of those strategies.<sup>1</sup> Narrowing this gap requires improved physician and patient education and elimination of barriers to treatment. The neurologist has a pivotal role in the process of stroke prevention.<sup>1,2</sup> Second, improved stroke prevention demands better understanding of stroke risk factors. Kwa et al. report that retinal arterial pathology correlates with cerebral small vessel disease on MRI in patients with atherosclerotic disease. This correlation is evident in both hypertensive and normotensive patients, suggesting that hypertension is not the sole determinant of small arteriolar pathology. Retinal arteriolar narrowing, however, is strongly associated with blood pressure, even in the normal range.<sup>3</sup> High-normal blood pressure is in all probability harmful in patients with cerebral small vessel disease. Findings from Kwa et al. also complement earlier observations that retinal microvascular abnormalities are independent risk factors for incident clinical ischemic stroke.<sup>4,5</sup>



*Retinal photograph. Abnormal crossing is seen (circle); retinal artery deflects the vein. The retinal arteries are also narrowed; diameter is less than half the diameter of the veins (small arrows). Sclerosis of the arteries is also seen; light reflex of the artery is increased with a copper wire phenomenon (large arrow).*

There was a large interobserver variability in the Kwa et al. study and it is not a routine matter to quantitate retinal artery pathology. However, serial funduscopy may assess an end organ for the monitoring of blood pressure control and stratifying patients at risk for stroke. Will other end organ assessment strategies—measuring renal function, assessing left ventricle wall thickness, and quantitating early changes in cerebral perfusion—be useful? And should we abandon the random sampling of blood pressure by cuff in favor of ambulatory blood pressure monitoring?

Stroke is a heterogeneous disorder. Each pathophysiologic subtype will need specific prevention strategies. There is solid evidence for the prevention of stroke in patients with atrial fibrillation and extracranial carotid artery stenosis. We need targeted treatments for patients with lacunar strokes or cerebral small vessel disease. Quantitating optic fundus pathology may be one next step.

### References

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## Accuracy of neurologists' clinical diagnosis of multiple system atrophy (MSA)

Osaki et al. pathologically confirmed a final clinical diagnosis of MSA in 86% of 59 patients. Six of the eight false-positive cases had PD. Retrospective application of published diagnostic criteria was superior to actual clinical diagnosis early in the disease, but not at the last clinic visit.

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## Comparison of IFN $\beta$ -1a treatment regimens in relapsing-remitting MS

Panitch et al., in a randomized, evaluator-blinded, 48-week comparison study of two IFN  $\beta$ -1a treatment regimens, found that 44  $\mu$ g given SC three times weekly was more effective than 30  $\mu$ g IM once weekly on relapse and MRI outcomes. The authors conclude that dose and frequency of administration significantly affect treatment benefit.

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## Doubling the dose of interferon $\beta$ -1a in relapsing MS

In a year-long, double-blind, controlled trial, Clanet et al. investigated the effects of intramuscular interferon  $\beta$ -1a in 802 relapsing MS patients randomized to standard or double-dose injections once weekly. No additional benefit of the higher dose was detected for the primary endpoint, time to confirmed disability progression, or for a series of secondary clinical and MRI outcomes.

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## Editorials consider these papers on the treatment of MS

The Panitch et al. paper was initially rejected and the rejection overturned on appeal—contingent on major revisions and more data.

The Kiebertz and McDermott editorial presents the views of the rejecting reviewers of Panitch et al. Lublin notes many of the same con-

cerns regarding the Panitch et al. paper but points out that both papers address an issue of clinical importance in the MS field. In the opinion of the Editor-in-Chief, two arguments (of the seventh and last review) for publication of Panitch et al. carried the day: 1) the data were sufficient

for FDA approval; and 2) “if this trial is not published, these results will not be subject to scrutiny.”

The conflicting results of these two studies demonstrate that many questions remain regarding optimal administration of IFN $\beta$  in MS patients.

Robert C. Griggs, MD

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## Gulf War Syndrome: A controlled neurophysiologic study

Despite the prominence of neuromuscular symptoms reported by Gulf War veterans, this comprehensive neurophysiologic study conducted by Sharief et al. in 49 symptomatic Gulf War veterans found no significant abnormalities that correlated with their symptoms, nor any differences when compared with Gulf War healthy or symptomatic non-Gulf veterans.

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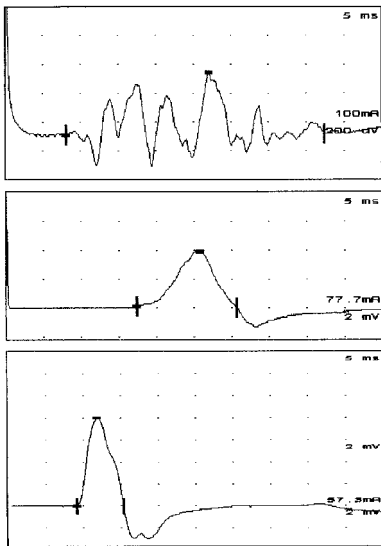
*“The findings of Sharief et al. provide strong support for the view . . . [that] symptomatic Gulf War veterans do not have a specific neuromuscular disease.”*

*The accompanying editorial by Barohn and Rowland notes that the decision of the Secretary of Veteran Affairs to have ALS considered a service-connected disease was made based on a “study that has not yet been published in a peer-reviewed journal [and] the data are still not available.” Barohn and Rowland review other published data that found no evidence for ALS or any other neuromuscular disease attributable to service in the Gulf War.*

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### Improved electrodiagnosis of CIDP

Thaisethawatkul et al. found that a distal compound muscle action potential (DCMAP) duration of >9 ms in any one of four motor nerves, has a sensitivity of 78% for CIDP and specificity of 94% vs ALS or diabetic polyneuropathy. DCMAP dispersion is useful in the electrodiagnosis of CIDP.

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### Homocysteine testing in stroke patients

In a series of ischemic stroke patients, Bushnell and Goldstein were unable to identify any patient characteristics associated with elevated homocysteine levels. Despite this, younger patients, those with hyperlipidemia, without diabetes, cardioembolic or small vessel strokes were more likely to be tested.

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### Population knowledge of stroke risk factors and warning signs

Reeves et al. examined knowledge and awareness of stroke in a population survey of over 2,500 adults in Michigan. One in five respondents were not aware of any stroke risk factors, while one in three were unable to identify any stroke warning signs.

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### Posterior circulation stroke in children

Ganesan et al. studied 22 children (17 boys, 5 girls) with vertebrobasilar (VB) territory stroke. Vertebral artery dissection was a common etiology and stroke was recurrent in 20%. They recommend that children with VB stroke have echocardiography, cervical spine x-ray, and catheter angiography if MRI is uninformative on etiology.

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### Gabapentin in restless legs syndrome (RLS)

Garcia-Borreguero et al. studied 24 RLS patients who were treated for 6 weeks with a mean dosage of 1,855 mg gabapentin, in a double-blind, crossover design (vs placebo). Active treatment was associated with a marked reduction of RLS symptoms and periodic leg movements of sleep, as well as an improvement in sleep architecture.

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### Evolution of carpal tunnel syndrome (CTS) after pregnancy

Carpal tunnel syndrome occurs in ~50% of all pregnancies. Padua et al. reassessed those patients with CTS symptoms during pregnancy that still had symptoms 1 year later. They noted that only one-third of patients showed improvement and that ~50% still complained of CTS symptoms.

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### Noninvasive ventilation in MG

Rabinstein and Wijdicks report that noninvasive ventilation using BiPAP prevented the need for endotracheal intubation in seven of 11 episodes of acute respiratory failure in MG. They suggest that successful use of BiPAP in MG requires its use before the development of hypercapnia.

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