More on lipid lowering in ischemic and hemorrhagic stroke


Michael Schneck (MS): The first paper supports the observation of the SPARCL study (Stroke Prevention by Aggressive Reduction in Cholesterol) that statins are of benefit in reducing the risk of ischemic stroke. While a post-hoc analysis in the SPARCL paper raised some concerns of an increased risk of hemorrhagic stroke with statin therapy, the meta-analysis did not confirm this observation.

While some have argued, based on the SPARCL data, that patients with hemorrhagic stroke should not receive statin therapy, the paper by Tseng might contradict those arguments (at least for subarachnoid hemorrhage (SAH) as this paper (a randomized study!) suggests there is a distinct advantage for patients to be on a statin, at least in reducing vasospasm related neurological deficits. Ideally, a randomized study of statin therapy would be performed in intracerebral hemorrhage patients as well.

Carotid disease: Facts and fancies


MS: In 1996, the United States Preventive Services Task Force looked at the question of screening for carotid disease in asymptomatic patients. An updated review of the data concludes that “the actual stroke reduction from screening asymptomatic patients and treatment with carotid endarterectomy is unknown; the benefit is limited by a low overall prevalence of treatable disease in the general asymptomatic population and harms from treatment.” The authors calculated that 4348 persons would need to be screened to prevent one stroke after five years and twice that number would needed to be screened to prevent a disabling stroke. They also note that even if a higher risk population could be defined, 461 persons would need to be screened to prevent one stroke over five years or 922 persons to prevent one disabling stroke over five years. Clearly, screening such as the mobile carotid duplex programs that exist at some health centers are not a cost-effective way to prevent stroke.

On the other hand, what can be done when carotid screening shows an unusual anomaly? Our data as to stroke risk in carotid disease derives from the landmark symptomatic and asymptomatic randomized series on carotid atherosclerotic stenosis. We still are limited, however, in understanding how arterial morphology (i.e. plaque morphology, vessel tortuosity, etc.) may contribute to risk. The second paper reported that surgical correction for symptomatic kinked carotids may be “safe and effective in relieving
symptoms and preventing stroke.” The benefit of putting arteries on the “straight and unanarrow” is therefore worthy of future study.

Women and stroke: The risk may be higher than we knew


MS: These two papers suggest that the risk of stroke in women is higher than otherwise realized. Towfigh and colleagues note that a higher prevalence of stroke may exist among women aged 45 to 54 years compared with similarly aged men. They attributed this to inadequate modification of standard risk factors in these women. Additionally, Harskamp and colleagues note that women with pre-eclampsia are more likely to develop cardiovascular disease later in life and suggest that the cause is an increased frequency in later life of cardiovascular risk factors in these patients. An interesting question is whether there is somehow a link between these two observations and neurologists maybe should ask for a history of pregnancy-related complications in ALL stroke patients.

The “non-focal” TIA: Transient neurological events and stroke risk


MS: While neurologists recognize that transient ischemic attacks have an increased risk of stroke, transient neurological attacks (TNAs) that are not associated with focal symptoms (non-focal TNAs) may not be benign either. This study reveals that patients with “nonfocal TNAs” have a higher risk of stroke (as well as dementia) as compared to patients without TNA (Hazard ratio 1.56 for stroke). Patients with mixed focal/ non-focal symptoms were also at higher risk (Hazard Ratio 2.49) than non TNA patients. Patients with TIs, by contrast, had a Hazard ratio of 2.14 for stroke. Thus, patients with transient neurologic events should probably undergo similar diagnostic evaluations and aggressive cardiovascular risk factor modification regardless of whether symptoms are focal (TIA) or nonfocal.

Reversible Cerebral Vasoconstriction Syndrome


Salvador Cruz-Flores (SCF): In this paper Ducros et al. report on the condition characterized by thunderclap headache associated with segmental intracranial vasoconstriction. They describe the precipitating factors, clinical and neuroimaging findings, and course. Interestingly, this condition can cause ischemic infarcts, intracerebral hemorrhage, subarachnoid hemorrhage (predominantly in the cortex), and reversible posterior leukoencephalopathy. This report along with the narrative review by Calabrese et al (Ann Intern Med 2007;146:34-44) should alert the neurological community about the existence of this condition and prompt us to establish criteria to standardize diagnosis and thus help find the treatment.
Is PFO a major cause of stroke?!


SCF: In this cohort study of stroke patients admitted to the hospital the authors found a significant association of PFO and PFO-ASA with cryptogenic stroke and with stroke with known cause regardless of age. The authors concluded that “these data suggest that paradoxical embolism is a cause of stroke in both age groups”, although these results are in stark contrast with the population based study by Meissner et al (J Am Coll Cardiol 2006;47:440-445). One more though: association does not mean causation thus closure of PFO may not result in risk reduction.

TIA centers


SCF: This cluster of studies highlight the more recent evidence showing that the risk of incident stroke after a TIA is as high as 10% during the first 90 days but in particular is as high as 5-7% during the first week of the event. More importantly, the SOSTIA and EXPRESS studies showed that an expedited approach to evaluation and treatment can potentially reduce the risk of stroke as much as 80% compared with predicted risk based on the ABCD2 score (SOSTIA) or with historical cohort. FASTER suggests that antiplatelet agents might decrease the early risk of stroke and although statin did not seem helpful, the study, however, was stopped early due to poor recruitment. Thus, early stroke risk after TIA is high and early intervention lowers it. Is it time for a randomized trial?
SONIA


SCF: In this study, the authors set forth a goal of validating the non invasive tests of MRA and TCD compared to the gold standard. As it turned out the positive predictive (PPV) and negative predictive values (NPV) for TCD and MRA at their best were 55% and 66% and 86% and 91% respectively. The prevalence of intracranial stenosis in the study was 20%. With these considerations in mind it is clear that a negative non invasive study is much more helpful by excluding the disease. A positive study does not accurately predict stenosis. This would be particularly true if the prevalence of the disorder or the pretest probability of the disorder is much lower.

Primary CNS Vasculitis: Multiple faces. Multiple entities?


Alejandro Rabinstein (AR): This large case series presents a wealth of useful clinical, radiological, and pathological information. Perhaps the most remarkable finding of the analysis is the heterogeneity of the diagnosis. Two-thirds of patients were diagnosed by angiography and one-third by biopsy. Brain MRIs were almost uniformly abnormal, often showing multiple infarctions (bilateral, cortical and subcortical). One-third of patients exhibited contrast enhancement and this finding was actually associated with better prognosis. Although 17% of patients died (mostly within the year following the diagnosis), most survivors had favorable functional outcome with immune treatment. Relapses occurred in one-quarter of patients. More than 40% of patients did well on prednisone alone. An immunosuppressant (typically cyclophosphamide intravenously and/or orally) was used in slightly over half of all patients and a favorable response to treatment was observed in 80% of them.

Thus, this excellent study teaches us that primary CNS vasculitis is a dangerous but often treatable condition (or conditions, as it is quite possible that multiple entities are currently being lumped into a single nosological category). This is also a good thing because next time I include vasculitis in my list of differential diagnoses with little evidence to support it I will not feel so guilty...

Subarachnoid hemorrhage: Assessment and outcomes


AJ: This elegant paper supports the use of a new index combining clinical, radiological, and ultrasonographic data to assess the risk of clinical and angiographic vasospasm. The resulting formula is a bit complicated and basically provides a numeric value to the same predictive analysis that we already apply in daily practice (the variables in the index are those we typically consider to estimate vasospasm risk, namely clinical grade, Fisher grade, and TCD findings, especially the Lindegaard ratio). Nonetheless, the value of the index is solidly proven in this paper and it reduces subjectivity (Sartre would say subjectivity cannot be eliminated as long as a subject is involved in the analysis). It should be an excellent addition to future studies on prevention and treatment of vasospasm.

AJ: One-third of patients with aneurysmal subarachnoid hemorrhage develop symptomatic vasospasm. These patients become highly dependent on cerebral perfusion pressure and oxygen carrying capacity to avoid ischemic brain damage. In these situations, some degree of hemodilution (down to a hematocrit of 30%) may be beneficial by improving the rheology of cerebral circulation. However, this study shows that more marked degrees of anemia are associated with worse functional outcome, likely because they compromise oxygen delivery. Unfortunately, the study does not allow discrimination between negative effects of anemia and the potentially harmful effects of blood transfusion (more patients with cerebral ischemia had transfusion). It is, however, the second study showing that profound anemia and transfusions are associated with worse outcome after aneurysmal subarachnoid hemorrhage. It is time for a prospective trial evaluating parameters for transfusion specifically in these patients. In the meantime, write triple H as hHH (h for hemodilution) and don’t go crazy ordering blood draws.

Lifestyle and stroke: The Europeans have the right perspective – music and coffee are ok


AJ: In these two rigorous studies, our European colleagues showed that music listening improves cognitive recovery and diminishes the risk of depression after MCA strokes while coffee consumption is not associated with increased risk of vascular events in patients who had an MI. As we already know, red wine is good for our vascular health, so I salute the authors of these studies with a good toast (Pinot Noir for me, please), turn on the music to create the ambiance, and order an Italian espresso with dessert. Stroke patients all over the world are surely grateful for these results. To Good Life!