Se supplementation exclusively for male patients. Now the study conducted by Nawrot et al. describes the fourth sexual dimorphic major health effect of Se, beyond fertility, cancer, and sepsis. One hesitates and wonders how and why Selene shines on men only.

The Se status is dominated by a hepatically derived Se transport serum protein, i.e. selenoprotein P (SePP). We and others have demonstrated that SePP controls Se distribution within the body and that SePP-KO mice display sex-specific Se-deficiency symptoms. SePP attaches to endothelial cells and protects from peroxynitrite-mediated damage in plasma. Moreover, we have just demonstrated that biosynthesis of selenoenzymes including SePP displays pronounced sex-specific differences, and male livers have a superior potency to translate mRNA into functional selenoproteins. Remarkably, these differences are not constant but Se-dependent.

If larger groups of people with a more divergent Se status were analysed, we would not expect such a linear correlation of blood Se with blood pressure as depicted in Figure 1. At higher Se status, all selenoproteins become maximally expressed and independent from the trace element. This kind of saturable effect has been similarly observed in both cancer prevention and sepsis studies mentioned earlier, in which participants with low baseline Se status always profited most. Consequently, successful Se supplementation will stabilize blood pressure in a healthier range.

Unfortunately, large supplementation trials are conducted mainly in the USA, where baseline Se levels are already replete because of better nutritional supply. Given the clear-cut and appealing correlation shown in the manuscript, some large-scale prospective analyses are clearly needed in Europe in order to benefit our hearts and health insurance systems. Such trials should necessarily include both men and women who are at risk of a low Se status, such as chronically ill patients, people on regular dialysis or with eating or digestion disorders, and vegans and vegetarians. Hopefully, financial support can be raised for such eagerly awaited large-scale European supplementation trials. The future shines bright, less pressure is in sight, especially at night.

References

Concerns on carotid stenting in octogenarians: reply

Barracchini and Ballotta\(^1\) point out some important issues concerning our registry data on carotid artery stenting (CAS) as well as on CEA in general.

They mention that a distinction neither between ischemic and haemorrhagic stroke nor between different types of ischemic strokes was made. We also regret not to have collected this information. However, concerning stroke as a complication of CAS or endarterectomy (CEA), the large, randomized studies on this issue also summarized all strokes into the primary endpoint of death or stroke.\(^2\) This makes sense because either CAS or CEA can be complicated by an excess of haemorrhagic strokes, for example, by the use of heparin in CAS.

In concordance with Barracchini and Ballotta,\(^1\) we are not sure that all symptoms in the symptomatic patients were as a result of carotid disease; however, this was the judgement of the treating physicians, which we have to accept in such a registry.

We also agree that timing of CAS or CEA in symptomatic patients with carotid stenoses is of crucial importance, which is emphasized in recent guidelines.\(^5\) In 84.5% (91.6% in octogenarians and 83.2% in non-octogenarians) of our symptomatic patients, symptoms occurred within 180 days before CAS.

The decision to treat a patient with CAS was left to treating physician. Although we share the caution of Barracchini and Ballotta\(^1\) to treat octogenarians for carotid stenoses at all, especially in the asymptomatic ones, this is true for CAS as well as CEA. As pointed out in our discussion:\(^5\) "The results of the Asymptomatic Carotid Surgery Trial (ACST)(6) showed, that CEA was superior to medical treatment only in patients with high-grade but asymptomatic carotid stenoses. However, in patients older than 74 years, there was no advantage of CEA, mainly due to a high mortality rate in the following years in both groups. Thus the selection of more symptomatic patients in our registry may already reflect the restriction of the treating physicians to high risk candidates of stroke in the very old". Our data also reflect only the use of CAS in our registry, not the practice or conviction of the authors.

We do not believe that a residual stenosis after CAS of about 10% is a treatment failure, for we do not have data to show us that such minor residual stenoses are associated with a worse outcome after CAS. The proportion of aborted procedures in this intention-to-treat CAS registry is an important quality measurement of this registry.

We repeat that the registry is not the practice or conviction of healthcare professionals from the American Heart Association/American Stroke Association Council on Stroke: co-sponsored by the Council on Cardiovascular Radiology and Intervention: the American Academy of Neurology affirms the value of this guideline. Circulation 2006;113: e409–e449.
