Correspondence

Letter by Anyfanti et al Regarding Article, “Effect of Renal Sympathetic Denervation on Glucose Metabolism in Patients With Resistant Hypertension: A Pilot Study”

To the Editor:

We are grateful to Mahfoud et al1 for their important article that adds valuable information regarding the effects of catheter-based renal sympathetic denervation. The reported improvement on glucose metabolism and insulin sensitivity may be the first link in a chain of pleiotropic beneficial effects of this procedure that extend far beyond blood pressure reduction. However, despite the initial optimism that welcomes these findings, there is a virtual concern that renders us skeptical in the interpretation of the results. The evaluation of insulin sensitivity, a primary outcome of the study, was based on homeostasis model assessment-insulin resistance and on the Qualitative Insulin Sensitivity Check Index, but hyperinsulinemic-euglycemic clamp is acknowledged as the indicated method for this purpose.2 Both homeostasis model assessment-insulin resistance and the Qualitative Insulin Sensitivity Check Index are of the same predictive value and correlate rather sufficiently with the hyperinsulinemic-euglycemic clamp method, but their indication concerns large studies where the clamp-method cannot be easily applied.3 What is more, many patients are misclassified with these indices, and it has previously been shown that homeostasis model assessment-insulin resistance is unsuitable for older individuals who may be at risk for impaired glucose tolerance.4 Because the mean age of the participants was 60 years and impaired glucose tolerance was present at baseline at 40%, there is an increased risk for patient misclassification, which would considerably alter the results given the small number of the study population (37 subjects).

It has to be noted that bilateral renal sympathetic denervation was recently applied in 2 patients with polycystic ovary syndrome and resulted in an improvement in insulin sensitivity by ~17.5% at 3 months follow-up, as assessed be the euglycemic hyperinsulinemic clamp, which was an additional benefit to blood pressure reduction.5 However, none of these patients received oral antidiabetic drugs or insulin before or during the study, and one of them even had normal fasting glucose levels at baseline. We believe that the conduction of large prospective studies, with properly selected patients and use of appropriate methodology, emerges as extremely important for the extraction of safe conclusions regarding the effect of renal denervation on blood glucose levels and insulin sensitivity.

Disclosures

None.

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References

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