

Could Pathophysiology Failure Be Ruled Out?



To the Editor:

I read with great interest the article by von Arx et al¹ published in the *The American Journal of Medicine*. Arx et al presented a case showing that renal denervation did not lower blood pressure in a drug-naïve patient and provided evidence that the nonresponsiveness of blood pressure to renal denervation may be due to arterial stiffness.

One of the possible reasons for the nonresponsiveness of blood pressure to renal denervation is pathophysiology failure. Pathophysiology failure means that renal sympathetic activity does not increase in a hypertensive patient. Arx et al¹ stated that they ruled out this possibility because systolic blood pressure variability of this patient was decreased from 18.0 mm Hg at baseline to 12.6 mm Hg at 3 months after renal denervation. The decrease in systolic blood pressure variability may indicate that the renal denervation procedure was successful in this patient; however, it did not provide information on whether the baseline blood pressure variability was elevated compared with that in the age-matched normotensive population. Therefore, it is still possible that renal sympathetic activity did not increase in this patient and that pathophysiology failure

may, in part, contribute to the nonresponsiveness of blood pressure to renal denervation in this patient.

Systolic blood pressure variability, as von Arx et al¹ pointed out, has been reported to be correlated with muscle sympathetic nerve activity.² However, this correlation was observed in young normotensive subjects with a mean age of 31 years.² This young age is different from the mean age of patients undergoing renal denervation, which is approximately 60 years.^{3,4} Therefore, the usefulness of systolic blood pressure variability as a proxy of sympathetic activity in the elderly population is still to be established.

Therefore, it is possible that pathophysiology failure may, in part, contribute to the nonresponsiveness of blood pressure to renal denervation in this patient.

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<http://dx.doi.org/10.1016/j.amjmed.2014.07.044>

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Funding: This work is funded by a grant from the National Health and Medical Research Council (1062671). The funding body played no role in the production of this publication.

Conflict of Interest: None.

Authorship: The author had access to the data and played a role in writing this manuscript.