Response to Letter Regarding Article, “Renal Denervation for the Treatment of Cardiovascular High Risk-Hypertension or Beyond?”

Our article “Renal denervation for the treatment of cardiovascular high risk-hypertension or beyond” aimed to provide an overview of the currently available data on renal denervation (RDN) in experimental models, in human hypertension, and also to provide an outlook on potential future research targets in the field of interventional sympathomodulation.

According to the consensus and position documents of the European Society of Hypertension and the European Society of Cardiology, RDN represents a treatment option for patients with resistant hypertension despite optimal medical therapy and after exclusion of secondary causes of hypertension, which is extensively discussed in our article. Furthermore, treatment of patients with elevated office blood pressure but normal ambulatory blood pressure values is not recommended. The prognosis of pseudoresistant hypertension remains controversial as several studies indicate that white-coat hypertension is associated with increased long-term risk of sustained true hypertension and increased incidence of stroke and hypertensive endorgan damage. However, a recent study suggested that pseudohypertension does represent a cardiovascular risk factor in untreated but not in treated subjects. There is evidence indicating that especially in patients with pseudohypertension, the sympathetic nervous system is highly active. We therefore proposed that further investigations are deserved to assess the effects of office blood pressure reductions by RDN on cardiovascular morbidity, mortality, and the development of sustained hypertension in patients with elevated clinic and normal 24-hour blood pressure.

As previously mentioned, we agree that adjusted drug treatment is an important part of the work-up before RDN can be considered. The recently published small study, mentioned by Wang, randomized 19 patients with resistant hypertension to adjusted drug treatment (n=10) and RDN (n=9). Blood pressure reduction after witnessed intake of intensified drug treatment was superior to RDN. However, the study results should be interpreted with caution because of methodological limitations and questionable clinical extrapolations. One should above all keep in mind that adherence to medication is a major problem in hypertension, and particularly in heavily medicated resistant hypertensives. The scenario of witnessed intake of drugs remains therefore an artificial situation, reserved for clinical investigations but not clinical routine.

In summary, based on the currently available evidence, RDN represents a treatment option in patients with resistant hypertension, if intensified adjusted drug treatment fails to control blood pressure, which is in agreement with the letter by Wang. Further investigations are deserved and ongoing to assess the effects of RDN on blood pressure control and to identify patient who potentially benefit from this intervention. Importantly, besides blood pressure control, modulation of the sympathetic nervous system by RDN remains a promising research target in several conditions associated with an elevated sympathetic activity, including heart failure and arrhythmias.

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References


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