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Single-sided renal denervation may be not suitable for patients with significant renal artery stenosis

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To the Editor

I have read with great interest a paper authored by Dr Schroeter and colleagues published in this journal [1]. This paper reported a case that single-sided renal denervation decreased office blood pressure of a patient from 187/108 mm Hg at baseline to 125/75 mm Hg at 1 month. Renal denervation did not perform in the right renal artery due to the presence of a 50% stenosis. The authors suggested that single-sided renal denervation could be a good choice to decrease blood pressure when the contralateral renal artery is not suitable for the procedure, for example, in the case of significant renal artery stenosis. However, this suggestion may be not appropriate.

The blood-pressure-lowering effect of single-sided renal denervation is not consistent. For example, one study (N=24) performed single-sided renal denervation in five patients due to the presence of significant renal artery stenosis in the contralateral renal artery [2]. Blood pressure decreased in only one of these five patients at six months after renal denervation; the 24-hour ambulatory blood pressure decreased by 14/10 mm Hg in the patient who responded to the procedure [2]. In a case report [3], single-sided renal denervation was performed due to the presence of an accessory renal artery with a significant stenosis. The office systolic blood pressure of the patient decreased moderately at 1 month and decreased by 25 mm Hg at 3 months [3]. However diastolic blood pressure did not decrease within 3 months after renal denervation [3].

Renal denervation does not seem to decrease blood pressure in patients with significant renal artery stenosis even with bilateral renal denervation. For example, three patients with significant renal artery stenosis underwent bilateral renal denervation in a study (N=63) [4]. One patient had a 50% stenosis in the left renal artery, and two had a 50% stenosis in the right renal artery. The area of renal artery stenosis was avoided for renal denervation

treatment. The changes in systolic blood pressure in these three patients at 6 months were 20, -6, and 60 mm Hg, respectively [4]. Therefore, whether it is safe and appropriate to perform renal denervation in patients with significant renal artery stenosis is questionable.

Renal denervation can decrease blood pressure [5-7] and may be beneficial to other non-hypertension indications [8,9]. However, patients with significant renal artery pathology were excluded in all major clinical trials. Therefore, we lack significant data regarding safety and efficacy of renal denervation in this specific cohort and more robust data are needed to clarify this issue [10]. Consequently, single-sided renal denervation due to the presence of renal artery pathology is not recommended in the routine clinic and should only be performed within clinical trials or registries such as Global Symplicity Registry.

Conflict of interest

The authors declare that they have no conflict of interest.

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