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EDITORIAL

A recent advance in Renal denervation to clinical practice

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We will launch the special issue "A recent advance in renal denervation to clinical practice" in 2023. Since the first proof-of-concept study in 2009 [1], it has been passed for 13 years, the renal denervation is going to be introduced into clinical practice. The new clinical trials using the sham-control group have been performed [2–4]. The meta-analysis and systematic review demonstrated that renal denervation is effective to reduce 24-hr blood pressure (BP), regardless of denervation techniques [5]. In 2022, the 2 major sham-controlled pivotal trials using the 2 different denervation techniques will be released. These study subjects had uncontrolled hypertension even medicated with one or more drugs. One is the SPYRAL On-Med Pivotal trial using the radiofrequency denervation technique and another is RADIANCE II trial using ultrasound technique, in which the trial, the Otsuka Holdings Co. Ltd (ReCor Medical Inc.). Inc released information on positive results in the market news.

In addition, a recently longer follow-up result of SPYRAL On-Med feasibility study demonstrated a long-term BP lowering effect for 24 h persisted for at least 3 years [6]. Especially, even after initiating the medication titration, in those with drug-resistant hypertension, who were medicated up to 3 or more drugs, a significant difference in the nighttime and morning BPs between the renal denervation group and sham-controlled groups was overt [7]. This indicates that renal denervation exhibit an "always on" BP lowering effect throughout 24 h, which covers nighttime and morning periods (the "pits' fall" time of medication [8].

Recently guidelines/guidance and consensus statement include RDN in the option of antihypertensive treatment strategy [9, 10]. Positioning of renal denervation in the total management of hypertension in combination with non-pharmacological intervention and medication should be discussed. In addition, the patient preference studies demonstrated a consistently significant number of hypertensive patients preferred renal denervation [11, 12]. Cost-effectiveness should be soon addressed before clinical use.

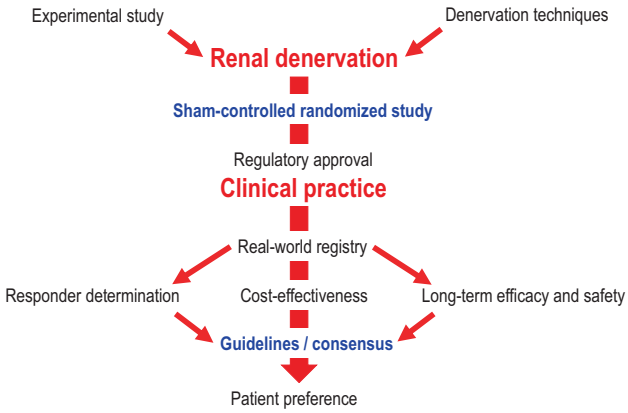

Fig. 1 Recent advance in renal denervation in direction to clinical practice.

Once 2 pivotal trials demonstrated clearly clinically meaningful positive results, renal denervation will be accepted to introduce into clinical practice. During the clinical practice after regulatory approval, the residual challenges of renal denervation such as how to detect the responders [13–16] and how to assess the successful endpoints of the procedures should be addressed in real-world studies.

There are again increasing numbers of experimental and clinical research papers on renal denervation [17, 18].

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We welcome submissions of original papers, review articles, and commentary on the various topics of renal denervation for the direction to clinical practice (Fig. 1).

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