

## **Strategies to Achieve Target Blood Pressure in Asians with Resistant Hypertension**

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With the increase in obesity in an aging society, the estimated number of patients with hypertension has increased to 43 million in Japan, with 70% of the population developing hypertension during their lives. However, half of hypertensives does not know have the disorder, and of those who do know, only half receive medical care, and those that do receive medical care, only half have blood pressure levels at target levels. The “rule of half” therefore indicates that only 1/8 of hypertensive people obtain the benefits of antihypertensive treatment. Urgent attention is required to ensure hypertensive patients obtain medical control, and receive more intensive treatment of uncontrolled blood pressure.

According to several Japanese studies, the proportion of resistant hypertension cases ranges between 3 and 30%. We investigated the pathophysiology of resistant hypertension in the Japanese population. The recent SPRINT study suggested more intensive treatment may reduce cardiovascular incidents in patients with hypertension. The SPRINT-J study is prepared now by the Japanese Society of Hypertension whether it shows the similar results in Japanese patients.

We consider there are two basic pathological etiologies for resistant hypertension in the Japanese and north-eastern Asians populations. The first cause is salt-toxicity, as Japanese people are in the top tier for salt consumption in the world at approximately 11g daily. The second cause is obesity and the metabolic syndrome, (i.e., “high salt metabolic syndrome”). High salt intake increases water retention that causes hypertension with low (suppressed) renin activity with inappropriately high aldosterone activity. In this type of hypertension, an aldosterone blocker is a suitable treatment. Salt also changes epigenetic control thereby enhancing salt-sensitivity and acting as a superoxide. Hypertension associated with obesity or the metabolic syndrome leads to metabolic dysfunction induced by hyper-activity of catecholamines and is the main cause of vascular injury. In such cases, inhibitors of the renin-angiotensin system (e.g., angiotensin-receptor-blocker or angiotensin-converting enzyme inhibitor), combined with a dual channel calcium blocker may be effective. In patients with type 2 diabetes mellitus, a SGLT2 inhibitor is a good candidate as a multiple risk improver including hypertension. A single dose or combination of these new antihypertensive drugs may contribute to overcoming the health burden of hypertension.