

## Dietary salt intake matters for development of hypertension

Dear Sir,

In context to the article "The hot button issue of salt-sensitive hypertension" author proposed that, inappropriate renal response to high salt intake due to dysregulation of internal renin-angiotensin system, oxidative stress, and/or inflammatory internal cytokines are the key factors modulating renal hemodynamics and tubular reabsorptive function to cause inappropriate sodium retention coupled with increased production of vasoconstrictor agent including Ang II that leads to the development of salt-sensitive hypertension.<sup>[1]</sup>

The average American eats about 3400 mg sodium in a day, but the American Heart Association recommends for a healthy person not more than 2300 mg/day and for people with hypertension or diabetes, daily recommendation is 1500 mg of sodium so that most people are consuming double what they need in terms of salt.

The association between a high salt intake and hardened pulse was already known 4500 years ago, but our understanding of the central role played by the kidneys in the sodium-driven increase in blood pressure is rooted in the studies of Rodriguez-Iturbe and Vaziri who postulated that restoration of sodium balance after salt intake depends on a natriuretic response, driven by a transient rise in blood pressure.<sup>[2]</sup>

High sodium diet can lead to fluid retention and for some salt-sensitive people, fluid retention can lead to hypertension, which puts someone at higher risk of stroke, heart disease, and kidney disease.

The phenomenon of salt sensitivity of blood pressure has been frequently observed but remains poorly understood, in part because only about one-half of hypertensive individuals exhibit it.

The most widely used method of assessing salt sensitivity is that proposed by Weinberger<sup>[3]</sup> which is based on the difference between the blood pressure found after the

administration of 2l of saline and the blood pressure found after sodium depletion, using a low Na diet (10 mMol/day) plus oral furosemide. Salt sensitivity was defined as a difference of  $\geq 10$  mmHg between salt-loaded and salt-depleted states, salt-resistance, difference of  $\leq 5$  mmHg. Using these criteria, salt sensitivity was found in 51% of the hypertensive population (73% of African-American hypertensive patients) and 26% of the normotensive individuals. The report further stated that salt-sensitive normotensive individuals develop hypertension more frequently than their salt-resistant counterparts.<sup>[4]</sup>

Many observations suggest a potential role of gamma-melanocyte-stimulating hormone as a sodium-regulating hormone; however, they do not demonstrate that functioning of this system is required to maintain normal sodium homeostasis.<sup>[5]</sup>

Dietary Approaches to Stop Hypertension (DASH) diet is a lifelong approach to healthy eating that's designed to help treat or prevent high blood pressure (hypertension). The DASH diet encourages to reduce the sodium in diet and eat a variety of foods rich in nutrients that help lower blood pressure, such as potassium, calcium, and magnesium.

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### Conflicts of interest

There are no conflicts of interest.

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Letter to Editor

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