No. 1834

Studies on the Development of Simple Method for Detecting Salt-Sensitivity and the Effect of Dietary Balance on Salt-Sensitivity

Yukio Yamori

Institute for World Health Development, Mukogawa Women's University

Summary

Excessive salt intake is the risk of hypertension individually differently. The detection of this difference is important for the prevention of hypertension. We proposed WHO Cardiovascular Diseases and Alimentary Comparison (CARDIAC) Study in1983, and revealed that Japanese diets containing soy and fish decreased coronary heart disease mortality to extend life expectancy but excess salt intake related to such Japanese diets increased hypertension and stroke morbidity, shortening healthy life expectancy by nearly 10 years than the average life expectancy. Therefore, individual recommendation for optimal salt intake is urgently needed for health promotion.

Method

① CARDIAC Study data of blood pressure and heart rates (H) examined by an automated blood pressure measurement system and 24-hour urinary sodium excretions (24UNa) in 24-hour urine samples collected by aliquot cups were obtained from 2,268 males and 2,212 females at the ages between 48 and 56 in 50 study sites. Data of 24UNa and H were devided into 3 tertiles from the low to the high Na1 to Na3 and H1 to H3, and significant differences in systolic and diastolic blood pressure SBP and DBP were checked by Jonckheere Terpstra's test.

② In a rural South Korea 218 subjects aged 30-59 (female 57%) participated in ambulatory blood pressure monitoring (ABPM) and 24U Na analysis and they were devided by H and 24UNa into 3 tertiles.

Results

① Both SBP and DBP in H3 tended to be significantly higher in Na3 in males (M) and postmenopausal females (F) aged 52-56 (SBP, M:$p<0.001$, F: $p<0.05$, DBP, M, F:$p<0.001$)

② Nocturnal SBP and DBP significantly positively associated with 24UNa. In Na3, both SBP and DBP in H3 were significantly higher than those in H1 and H2.

Conclusion

By the multicenter CARDIAC Study data both SBP and DBP in males and menopausal females in H3 tended to be significantly higher than in H1 and H2, in higher range of salt intake, Na3. In South Korean population H3 in Na3 compared with H1 and H2 showed significantly higher nocturnal SBP and DBP which were significantly related with 24UNa.