

Effect of diet and life-style modification on the severity of CKD in Korea

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Introduction

Chronic kidney disease (CKD) is present in upto 13.7% of Korean adults and caused by chronic diseases, such as hypertension, diabetes mellitus, and obesity. The chief aim of CKD treatment is to prevent renal function deterioration and cardiovascular complications. The key of CKD treatment is to control blood pressure and lessen proteinuria. Modification of life style and diet is one of the modifiable risk factors for control of blood pressure and proteinuria, also. We reported various health-related behaviors, such as protein intake, salt intake, exercise, and body weight control, may have indirectly affected the prevalence of CKD from the KNHANES data derived from questionnaires. We tried to verify the effect of life-style modification on anti-proteinuric role of an ARB in the CKD patients with hypertension and albuminuria.

Methods and participants

The results are based on the analysis of data from an open-label, case-controlled, randomized clinical trial on education about low-salt diets (NCT01552954), which was conducted between March of 2012 and March of 2013. After a run-in period of 8 weeks, all patients received the angiotensin II receptor blocker olmesartan (40 mg daily). Patients, who had hypertension and albuminuria more than 30 mg/day, were then divided into two groups. One group was treated for another 8 weeks with angiotensin II receptor blocker plus conventional low-salt diet education, and the other group was treated for 8 weeks with angiotensin II receptor blocker plus intensive low-salt diet education. The final analyses was performed with 245 completed patients. We analyzed the effect of intensive education for low salt diet, the change of protein intake estimated by 24-h urine urea excretion, salt intake estimate by urine sodium excretion, and body weight, on the anti-proteinuric role of an ARB.

Results and conclusions.

1. Short term weekly diet-education is effective to reduce sodium intake.
2. Reduction of salt intake has an additive effect on anti-proteinuric role of ARB.
3. Increase of protein intake attenuates the anti-proteinuric role of ARB.
4. Small change of body weight also affects on anti-proteinuric role of ARB.
5. There is a positive interaction between salt and protein intake to reduce albuminuria with ARB for hypertensive CKD patients, although both dietary component are important determinants to reduce

albuminuria by ARB.

6. Changes of urinary sodium and body weight are related to changes of urinary angiotensinogen and podocalyxin excretion.

Future study

We are doing the follow-up observational study with the participants for 3 years. We will analyze the long-term effect of 8-week education for low salt diet and the impact of life-style modification in salt intake, protein intake, and body weight change on the progression of albuminuria and estimated glomerular filtration rate.

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