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# Dietary behavior of CKD patients before and after COVID-19 pandemic period

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**Objectives:** As the COVID-19 infection went global pandemic in 2020, many countries have carried out social lockdown policies. It resulted in changes in lifestyles such as diet, physical activity, and social interaction. This study aimed to investigate the changes of lifestyles focusing on diet, especially in patients with chronic kidney disease (CKD) during COVID-19 pandemic period.

**Methods:** We compared data from 2019 and 2020 of the Korea National Health and Nutrition Examination Survey as before and after COVID-19, because COVID-19 was first detected in January 2020 in South Korea. CKD was defined as albumin to creatinine ratio > 30 mg/g or estimated glomerular filtration rate (eGFR) < 60 mL/min/1.73 $m^2$. CKD was categorized as two groups, CKD stage 1-2 and CKD 3-5; eGFR over 60 with albuminuria and eGFR below 60 mL/min/1.73 $m^2$.

**Results:** This analysis included a total of 5,084 and 4,338 participants from 2019 and 2020. When compared to normal group, CKD group showed lower energy intake, but the proportion of carbohydrates, proteins, and lipids did not differ. In the pre-COVID-19, CKD stage 3-5 group had practiced low salt diet (1612.33 ± 62.05mg/1000kcal) well compared to normal and CKD stage 1-2 group (p=0.007). However, post-COVID-19 period, sodium intake significantly increased only in CKD stage 3-5 group (1893.52 ± 109.18 mg/1000kcal, p=0.015), and the urine Na/Cr ratio also increased (p=0.001). The main source food of sodium was kimchi and salt in every group, but the proportion changed in the post-COVID-19 period. In CKD stage 3-5 group, compared to pre-COVID-19 period, the intake of noodles and instant noodles increased 35% and 91%, respectively. Interestingly, the potassium intake increased from pre-COVID-19 to post-COVID-19 in all three groups.

**Conclusions:** The COVID-19 pandemic adversely affects CKD patients' diets in terms of sodium intake. We need to pay special attention to diet and nutritional education for CKD patients.