

만성 신부전 환자군에서 비타민 D결핍과 우울증의 관계 연구

연세대학교 의과대학 내과학교실

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Vitamin D Deficiency is Significantly Associated with Depression in Chronic Kidney Disease Patients

Jong Hyun Jhee, Su-Young Jung, Hyung Woo Kim, Geun Woo Ryu, Sul A Lee, Seohyun Park
Hyung Jung Oh, Jung Tak Park, Seung Hyeok Han, Shin-Wook Kang, Tae-Hyun Yoo

Department of Internal Medicine, Yonsei University College of Medicine

Background: Recent studies have reported significant associations between vitamin D deficiency and depression in the general population. Even though both vitamin D deficiency and depression are common in patients with chronic kidney disease (CKD), the association between these two prevalent factors remains poorly elucidated. Therefore, we investigated the association between vitamin D deficiency and depression in CKD patients.

Methods: The data from Korean National Health and Nutritional Examination Survey between 2010 and 2012 were used for analysis. Patients with estimated glomerular filtration rate ≤ 60 mL/min/1.73m² were enrolled. Vitamin D deficiency was defined as 25-hydroxyvitamin D3 [25(OH)D3] levels ≤ 10 ng/mL. The patients were divided into groups with or without vitamin D deficiency. Depression was determined by the EuroQOL-5D (EQ5D) questionnaire. Independent associations between vitamin D deficiency and depression were evaluated by multiple logistic regression analysis.

Results: The mean age was 71.2 ± 9.3 years, and 257 patients (51.9%) were female. The mean 25(OH)D3 levels were 18.78 ng/mL in total, 8.48 ng/mL in patients with vitamin D deficiency, and 19.69 ng/mL in patients without vitamin D deficiency. The prevalence of depression in CKD patients was higher compared to the general population (14.3% versus 11.1%, $p=0.031$). Moreover, the prevalence of depression was significantly higher in patients with vitamin D deficiency compared to those without vitamin D deficiency (27% versus 13.3%, $p=0.022$). EQ5D index of the group with vitamin D deficiency was lower than those without vitamin D deficiency (0.76 versus 0.85, $p=0.024$). Multiple logistic regression analysis showed that vitamin D deficiency was a significantly independent predictor of depression after adjusting for age, sex, hypertension, diabetes mellitus, anemia, smoking history, alcohol consumption, body mass index, proteinuria, and parathyroid hormone levels (odds ratio=5.135, 95% confidence interval=1.541 to 17.106, $p=0.008$).

Conclusion: Depression was highly prevalent in CKD patients. The prevalence of depression was higher in CKD patients with vitamin D deficiency. In addition, vitamin D deficiency was a significantly independent predictor of depression in CKD patients. Therefore, determining vitamin D levels might be helpful in predicting depression in these patients.

Key Words: 비타민 D 결핍, 우울증, 만성신질환

Vitamin D deficiency, Depression, Chronic kidney disease