

## 만성복막투석환자에서 골밀도의 독립적인 예측인자로의 영양지표들

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### Nutritional Markers, not Markers of Bone Turnover, are Independent Predictors of Bone Mineral Density (BMD) in Chronic Peritoneal Dialysis (CPD) Patients

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**Purpose** : This study was performed to evaluate the factors associated with BMD in CPD patients.

**Method** : BMD using DEXA (dual-energy x-ray absorptiometry), markers of bone turnover, such as (iPTH, osteocalcin, 25-hydroxy vitaminD3, Bone alkaline phosphate, N-telopeptide, C-telopeptide), and nutritional markers (albumin, prealbumin, nPNA) were measured in 91 stable CPD patients.

**Results** : The mean( $\pm$ SD) T-scores of lumbar spine(LS) and femoral neck(FN) were  $-1.19\pm 1.52$  and  $-1.24\pm 1.01$ , respectively. The mean Z-scores of LS and FN were  $0.78\pm 1.33$  and  $-0.40\pm 0.92$ , respectively. According to the WHO based criteria, LS T-scores showed osteopenia in 41% and osteoporosis in 17%. The prevalence of osteopenia and osteoporosis in FN was 53% and 7%, respectively. LS T score was positively correlated with albumin ( $r=0.29$ ,  $p<0.005$ ), BMI ( $r=0.40$ ,  $p<0.001$ ). A positive correlation was found between FN T-score and albumin ( $r=0.40$ ,  $P<0.001$ ) and prealbumin ( $r=0.38$ ,  $p<0.001$ ) and BMI ( $r=0.29$ ,  $p<0.006$ ), and age ( $r=-0.32$ ,  $p=0.002$ ). Markers of bone turnover were not associated with BMD. In multiple linear regression models, independent variables were age, BMI, albumin and prealbumin for FN T-score ( $r^2=0.27$ ,  $F=6.23$ ,  $p<0.001$ ). BMI and age were independent variables for LS ( $r^2=0.24$ ,  $F=6.05$ ,  $p<0.001$ ). In subgroup analysis according to sex, positive correlation was observed between albumin or BMI and LS or FN T-score in female. But in male group, only BMI was positively correlated with LS T-score while albumin, prealbumin and age were correlated with FN T-score. Multiple linear regression model showed that BMI and prealbumin were independent variables for female, and prealbumin and age for male in FN. BMI and age were independent variables for female and BMI for male in LS.

**Conclusion** : Nutritional markers, not markers of bone turnover, are independent predictors of BMD in CPD patients.

**Key Words** : 복막투석 골밀도 영양지표

Peritoneal dialysis bone mineral density nutrition