

복막투석환자에서 골밀도의 독립적위험인자로의 영양지표

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Nutritional Markers, not Markers of Bone Turnover, are Independent Predictors of Bone Mineral Density in Chronic Peritoneal Dialysis Patients

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Background and Aims: This study evaluated the factors associated with bone mineral density (BMD) in chronic peritoneal dialysis (CPD) patients.

Methods: In this cross-sectional study in 91 stable CPD patients, BMD was measured using dual-energy x-ray absorptiometry. Markers of bone turnover (iPTH, osteocalcin, bone alkaline phosphatase, urinary N-telopeptide, serum C-telopeptide), 25-hydroxy (OH) vitamin D3 and nutritional markers (albumin, prealbumin, nPNA, BMI) were measured by standard techniques.

Results: For the lumbar spine (LS) and femoral neck (FN), the mean T-scores were -1.19 ± 1.52 and -1.24 ± 1.01 , respectively, and the mean Z-scores were -0.78 ± 1.33 and -0.40 ± 0.92 , respectively. Males had significantly lower Z-scores than females at the LS ($p=0.039$). Using the WHO-based criteria, osteopenia ($-2.5 < T\text{-score} < -1.0$) at the LS and FN was observed in 37 (41%) and 48 (53%) patients, respectively, and osteoporosis ($T\text{-score} \leq -2.5$) at the LS and FN was observed in 15 (17%) and 6 (7%) patients, respectively. LS T-score was positively correlated with BMI ($r=0.40$, $p<0.001$) and albumin ($r=0.29$, $p=0.005$), and FN T-score was positively correlated with albumin ($r=0.40$, $p<0.001$), prealbumin ($r=0.38$, $p<0.001$), age ($r=-0.32$, $p=0.002$) and BMI ($r=0.29$, $p<0.006$). Markers of bone turnover were not associated with BMD. In multiple linear regression models, independent predictors of FN T-score were age, BMI, albumin and prealbumin ($r^2=0.29$, $F=6.23$, $p<0.001$), whereas BMI was the only independent predictor of LS T-score ($r^2=0.24$, $F=6.63$, $p<0.001$).

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

Key Words: 복막투석, 골밀도, 영양

Peritoneal dialysis, Bone density, Nutrition