

## CHRONIC KIDNEY DISEASE BONE DISEASE

MP378

### RISK FACTORS FOR FRACTURES IN TYPE 2 DIABETIC WITH CHRONIC KIDNEY DISEASE STAGE: THE SAINTS AND THE SINNERS

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**Introduction and Aims:** Since the population in the developed world is aging, the burden of fragility fractures is a constantly increasing problem. Despite the fact that potent bone-specific pharmaceutical agents have become available, the problem of how to identify patients with high fracture risk yet remains an enigma. Some studies mention the role of a normal mineral metabolism is critical for skeletal development and preservation of bone integrity. The aim of this study is to investigate the association of mineral metabolism with hip fractures in type 2 diabetic with chronic

kidney disease (CKD).

**Methods:** In a observational study we included 107 type 2 diabetic patients with chronic kidney disease (CKD) stages 2- 3, followed in our outpatient Diabetic Kidney Clinic. We used descriptive statistics, the Student's t and the chi-square tests. We also divided our population according to the hip fractures, G1 = without fractures (n=95) and G2 = with fractures (n=12), and we compared these groups regarding the several biological and laboratorial parameters analyzed. We employed a multivariate logistic regressions model to identify risk factors of hip fractures.

**Results:** The mean age of these patients was 59.6 years, the mean eGFR (MDRD) was 43.5ml/min, and 37.4% (40) were female. We found that G2 patients showed higher age (p=0.050), phosphorus (p=0.028), iPTH (p=0.021), FGF-23 (p=0.0001) and osteocalcin (p=0.001) and lower levels of eGFR (p=0.0001), Klotho (p=0.0001) and 25 (OH)<sub>2</sub>D3 (p=0.002). In a multivariate logistic regression model adjusted to years, gender, eGFR, calcium, phosphorus, iPTH, 25 (OH)<sub>2</sub>D3, osteocalcin, FGF-23, Klotho, body and mass index, we found that 25 (OH)<sub>2</sub>D3 (OR= 0.772, p=0.037), Klotho (OR= 0.956, p=0.037) and FGF-23 (OR=1.008, p=0.0001) were independent risk factors of hip fractures.

**Conclusions:** In your study the circulating 25 (OH)<sub>2</sub>D3, Klotho and FGF-23 are the novel independent predictor of fracture risk in type 2 diabetic patients with chronic kidney disease (CKD) stages 2- 3. Further clinical studies, with more patients are required to study more precisely the role of bone metabolism and evaluate if the therapeutic intervention can reduce the risk of the fractures.