

## DIABETES - CLINICAL STUDIES - 2

MP433 **ANGELS AND DEMONS REGARDING CARDIOVASCULAR DISEASE IN DIABETIC RENAL PATIENTS: THE ROLE OF FGF-23 AND KLOTHO ON THE PULSE PRESSURE**

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**Introduction and Aims:** The last decade have shown that FGF23 and Klotho may have relevant independent actions on the renal and cardiovascular systems. They interfere with vascular functions and may play a role in vascular calcification, atherosclerosis and arteriosclerosis. On the other hand, pulse pressure is a well-known risk factor of cardiovascular morbidity and mortality in renal patients. The aim of this study is to investigate the relationship between FGF-23 and Klotho with pulse pressure in type 2 diabetic with chronic kidney disease (CKD) stages 2-3.

**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 pulse pressure, G1 <50 mmHg (n=79) and G2 ≥ 50 mmHg (n=61), and we compared these groups regarding the several biological and laboratorial parameters analyzed. We employed a multiple regression model to identify risk factors of increased pulse pressure (PP). In this model we used as dependent variable the pulse pressure, and as independent ones age, mineral metabolism parameters, urine albumin-to-creatinine ratio, insulin resistance, oxidative stress, eGFR, FGF-23 and Klotho levels.

**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=0.017), phosphorus (p=0.0001), iPTH (p=0.0001), urine albumin-to-creatinine ratio (p=0.001), Homa-IR (p=0.001), FGF-23 (p=0.0001) and OxLDL (p=0.0001) and lower levels of eGFR (p=0.0001), Klotho (p=0.0001) and 25(OH)<sub>2</sub>D<sub>3</sub> (p=0.0001). In the multivariate linear regression model we found that FGF-23 ( $\beta=0.377$ , p=0.047) and the Klotho ( $\beta= -0.567$ , p=0.023) are independent risk factors for increasing the pulse pressure.

**Conclusions:** In a population of type 2 diabetic with chronic kidney disease stages 2-3, the Klotho and FGF-23 levels are independently associated with PP. Further studies with more patients and with medical intervention are warranted to confirm whether an increase in Klotho and a decrease in FGF-23 would reduce the PP and consequently the cardiovascular risk of our patients.