

Cardiovascular events in pre-kidney transplant candidates: are there differences between conventional vs non-conventional risk factors in prognosis ?

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BACKGROUND & AIMS:

Cardiac morbidity is frequent in advanced chronic kidney disease (CKD), being ischaemic heart disease, heart failure (HF), valve disease and arrhythmias the most prevalent. Traditional risk factors, including lipid disorders (LD) have been related to events in follow-up, but

non-traditional risk factors, including mineral and bone disease (MBD) should be considered in this patients.

We aimed to compare LD and MBD impact in patients (P) who were assessed for kidney transplantation (KT).

METHODS:

Demographic, clinical and biochemical data were recorded. CV events included acute coronary syndromes (ACS), HF, valve disease and arrhythmias, as well as procedures during follow-up. Cinecoronariography (CCG) was indicated if P were ≥ 50 years old (y)

without diabetes (DBT) or ≥ 40 y and DBT or history of angina, previous HF admissions, myocardial infarction, systolic dysfunction, ventricular arrhythmia or positive functional assessment.

RESULTS:

Four hundred and twenty-nine P were assessed between June 2010 and December 2016. Sixty-one percent were males, aged 52 ± 14 y; 60% older than 50 y. History of hypertension in 80% and DBT in 12.5% were found. KT was performed in 47% of assessed P, in 6.5% on a preemptive basis. Dyslipemia was found in 71%, being LDL-cholesterol (LDL-C) > 100 mg/dl present in 50% and triglycerides > 150 mg/dl in 46% under medical treatment with statins \pm ezetimibe. Target LDL-C values were achieved at KT assessment in 18%.

Pre-KT parathyroidectomy (PTX) for uncontrolled hyperparathyroidism was performed in 15.4%. Serum calcium and phosphate were 9.5 ± 1 and 5.2 ± 1.5 mg/dl; high levels were found in 11 and 44% respectively. Parathyroid medical treatment was achieved with Calcium salts (78%), Sevelamer (16%) and Cinacalcet (10%).

On-dialysis period was longer in P who were PTX (3685 ± 1290 vs 2216 ± 1666 days; $p < 0.001$).

Any cardiac disease was found in 57% of assessed P, being ischaemic heart disease the most common (32% of the population).

Cinecoronariography was performed in 44%, with almost normal

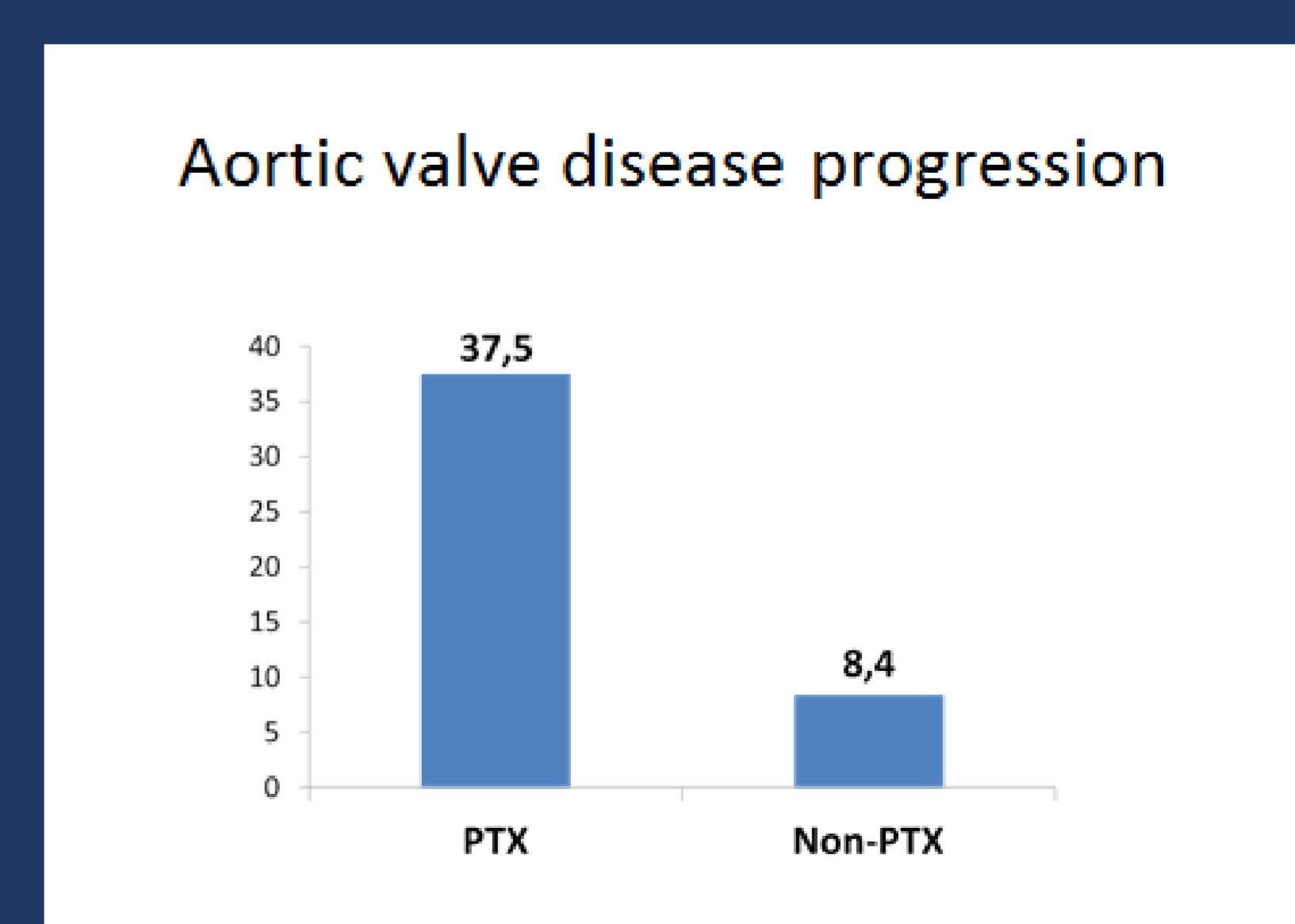
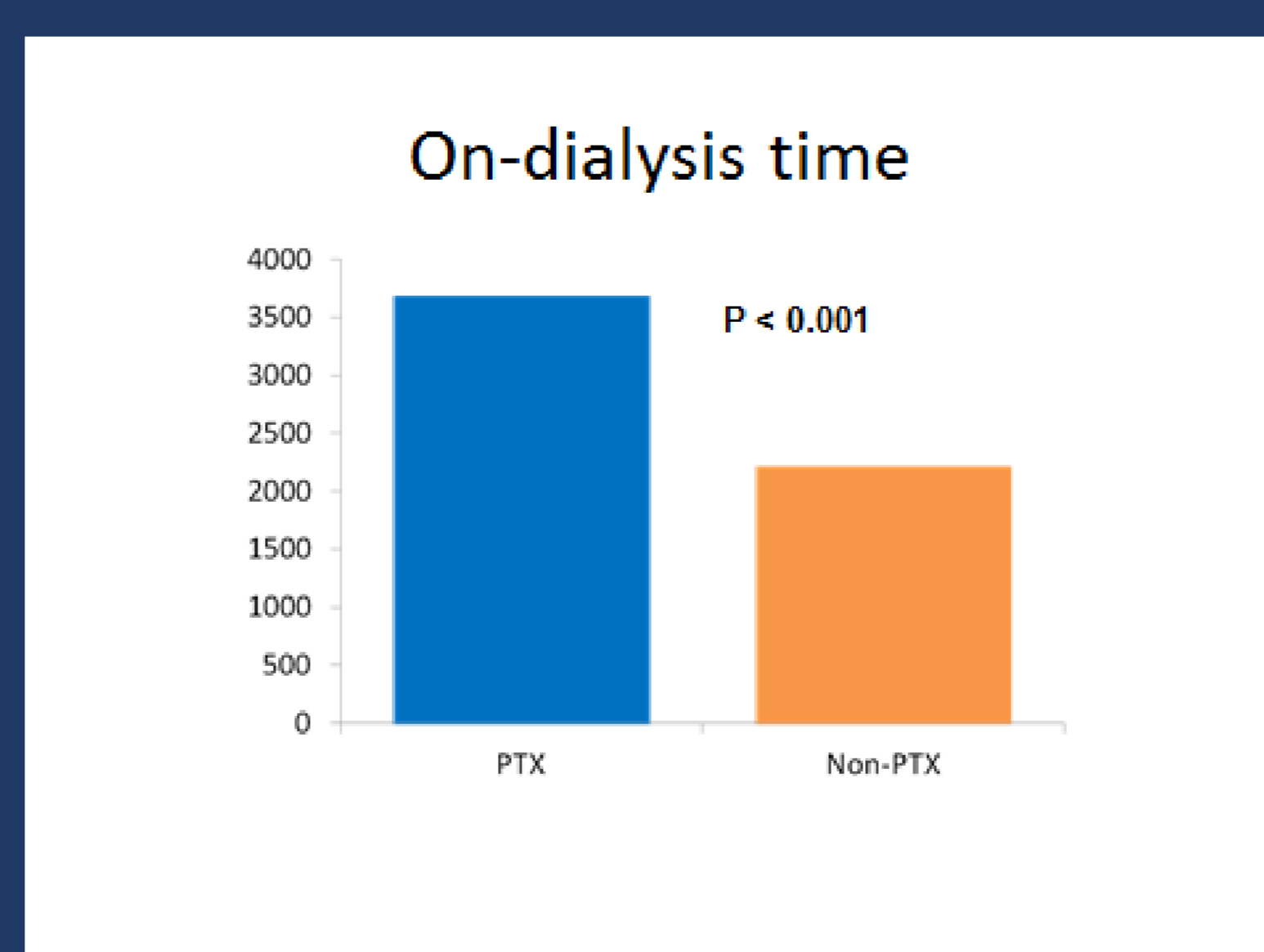
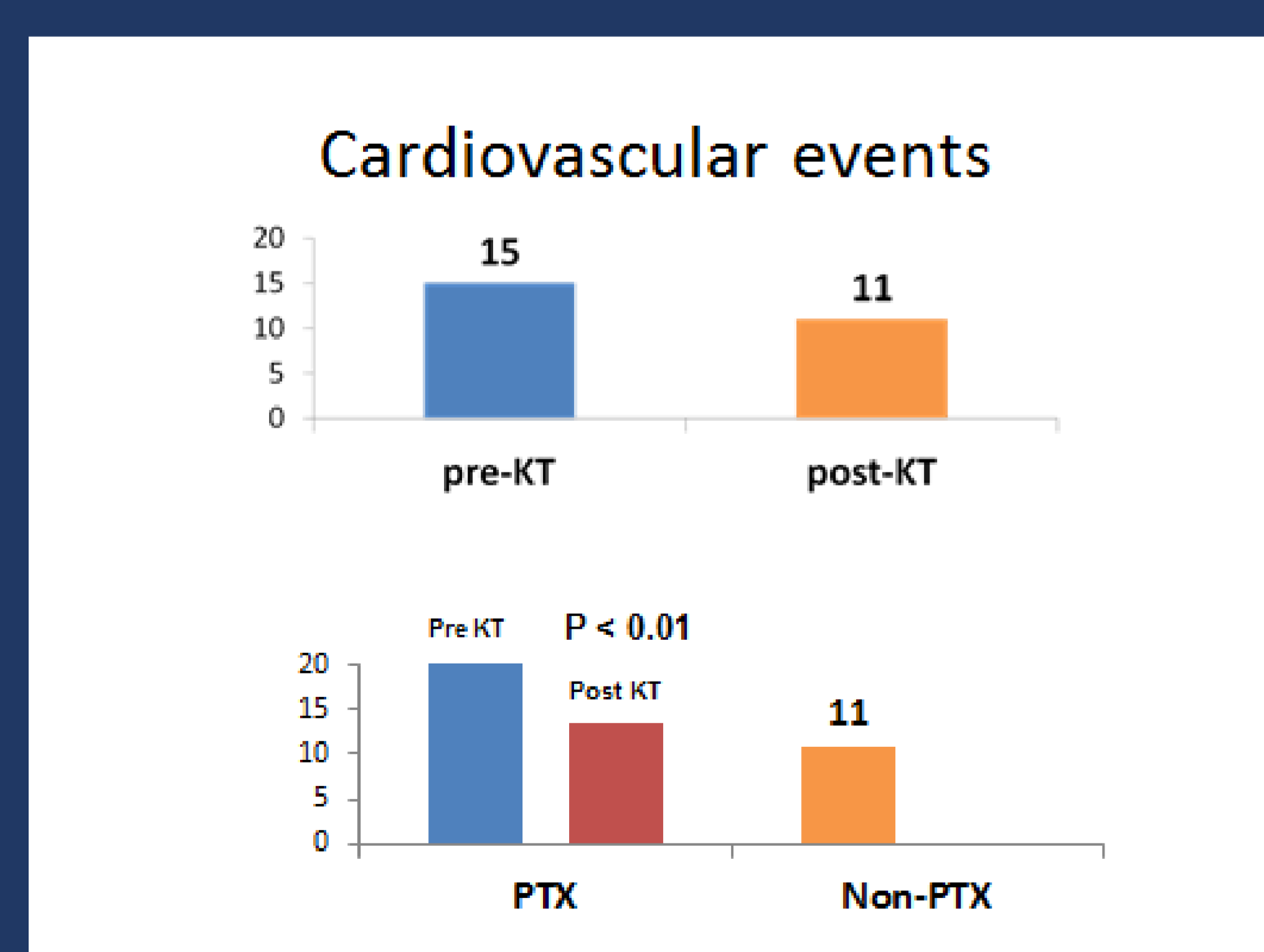
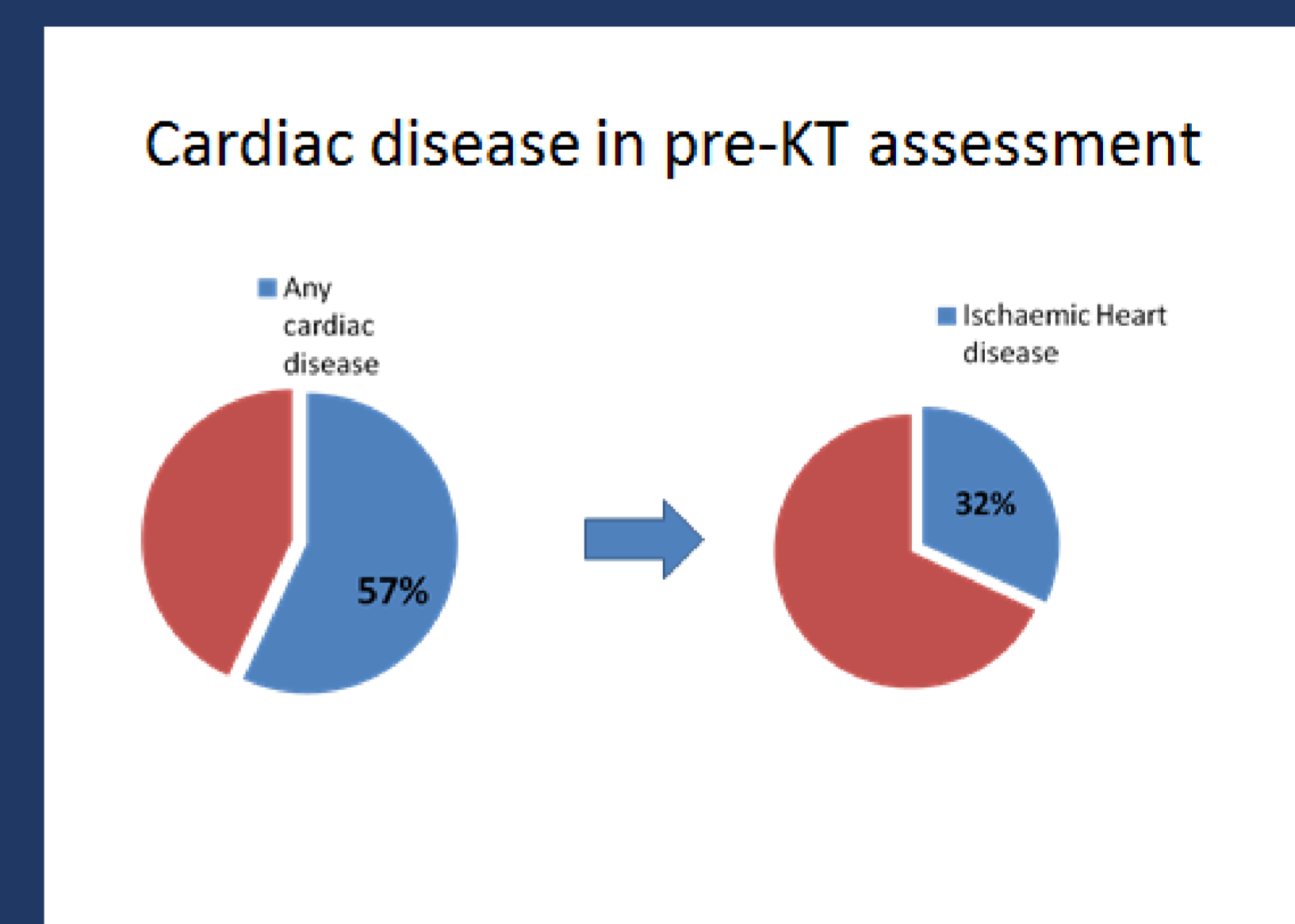
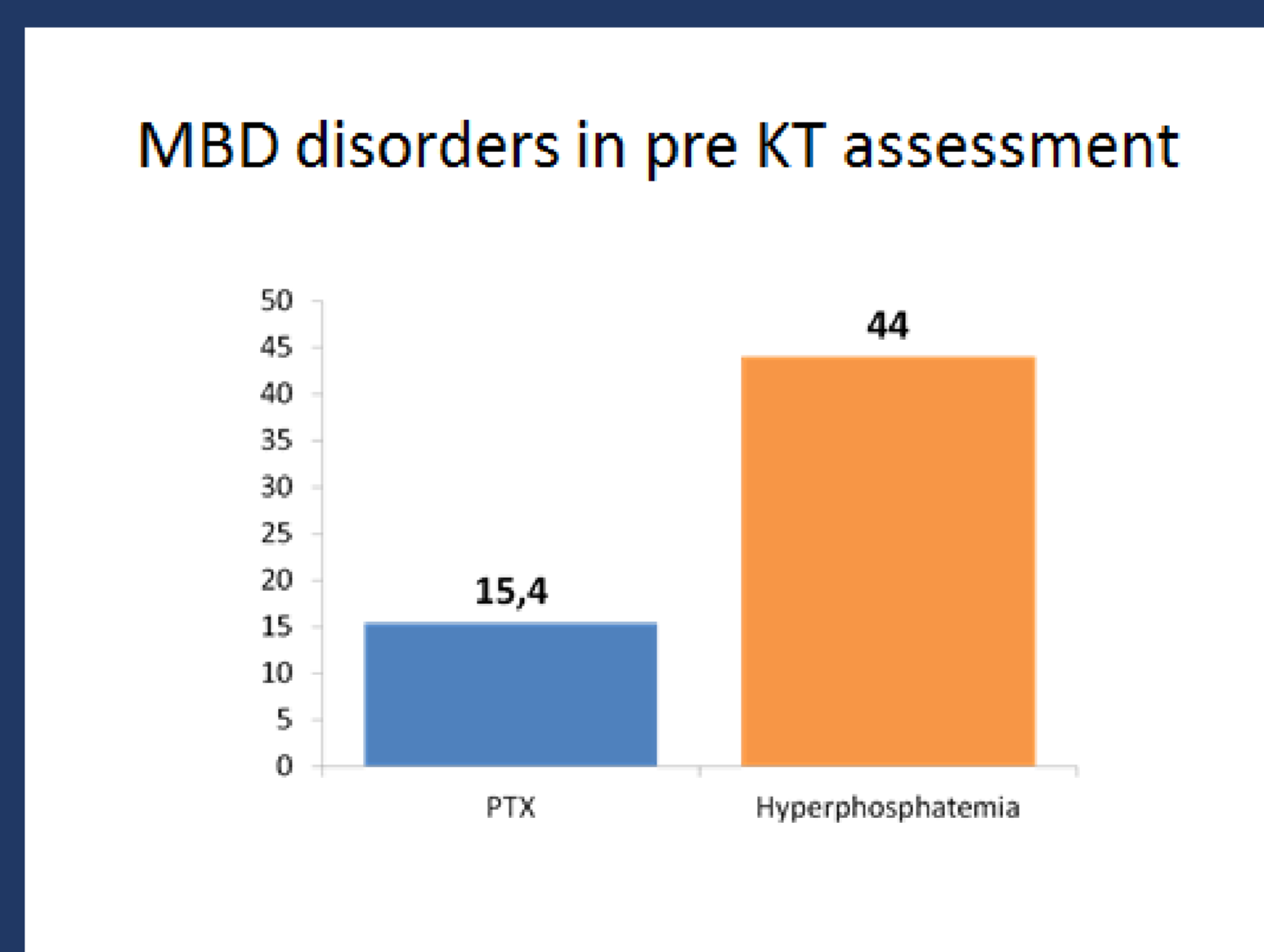
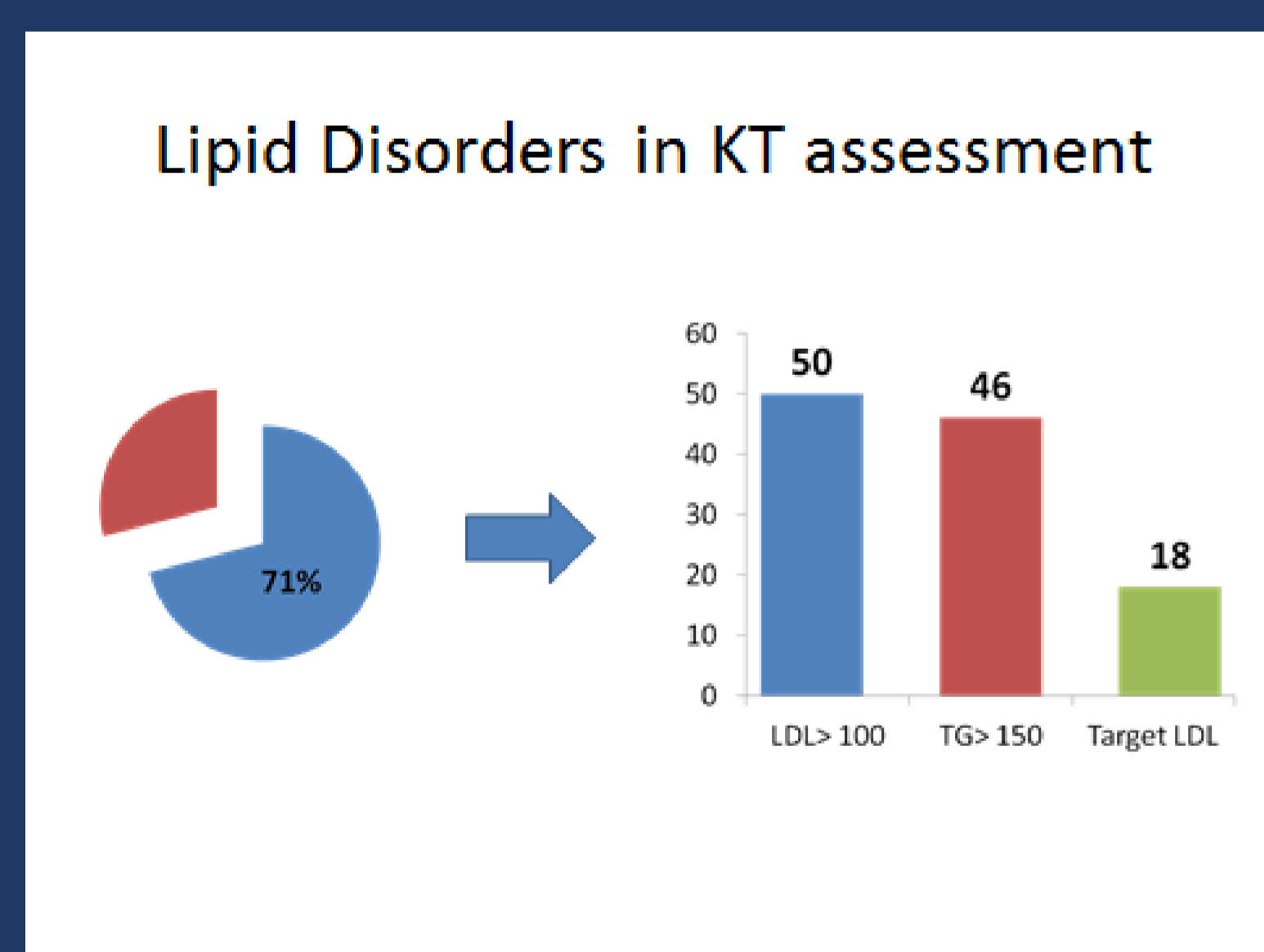
angiograms in 37%. While a total of 15% had pre-KT cardiovascular (CV) events, 11% had any after KT. Aortic and mitral valve diseases progressed during a 886 days (391-1541) of follow-up period.

Pre-KT CV events were higher in PTX P (26.2 vs 13.4%; $p = 0.01$; OR 2.3; CI95% 1.2-4) but no in P with lipid disorders ($p = NS$). These events were mainly due to HF admissions in P who were PTX (14.3 vs 5.2%; $p = 0.02$; OR 3; CI95% 1.15-7.9). In concordance with these results, post-KT CV events tended to be higher in PTX P (16.4 vs 8.6%; $p = 0.06$).

Post-KT heart failure admissions were also higher in PTX P (27.3 vs 11.2%; $p = 0.043$).

Pre-KT mortality was higher in P with hyperphosphatemia (6 vs 1.5%; $p = 0.02$; OR 4.2; CI95% 1.15-15) but no differences were found in P with lipid disorders ($p = NS$). Consistently, post-KT was higher in P who were PTX (25 vs 11.4; $p = 0.05$), with no significance for lipid disorders ($p = NS$).

While no differences were found regarding mitral valve disease progression, aortic valve disease worsened more frequently during follow-up in P who were PTX (37.5 vs 8.4%; $p = 0.001$; OR 6.5; CI95% 1.9-22).



CONCLUSIONS:

Cardiac disease is a frequent and severe comorbid state in CKD who are assessed for kidney transplantation. Uncontrolled MBD was more frequently found in P who developed cardiovascular events during follow-up than lipid disorders. Longer dialysis periods were associated with poorer outcome during follow-up. Non-conventional may be more important than conventional risk factors in conditioning heart disease in advanced CKD.

Authors declare that they have no conflict of interest regarding the material discussed in the present poster