



COMPARATIVE ANALYSIS OF GLYCEMIC VARIABILITY PARAMETERS IN PATIENTS WITH CKD IN PREDIALYSIS vs PERITONEAL DIALYSIS



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Objectives

There are many factors that influence the glycemic control in uremic diabetic patients both in predialysis and undergoing replacement therapies.

Aim of study is the comparative analysis of glycemic variability in patients with chronic kidney disease (CKD) and type 2 diabetes mellitus (T2DM) vs peritoneal dialysis (PD) diabetic patients using continuous glucose monitoring system (CGMS).

Methods

The study included 15 patients with CKD stage 3-4 and T2DM (7M/8F, 66.8 7.8 years) and 11 uremic diabetic patients undergoing PD (3M/8F, 65.8 10.2 years) which were monitored with CGMS for 72 hours.

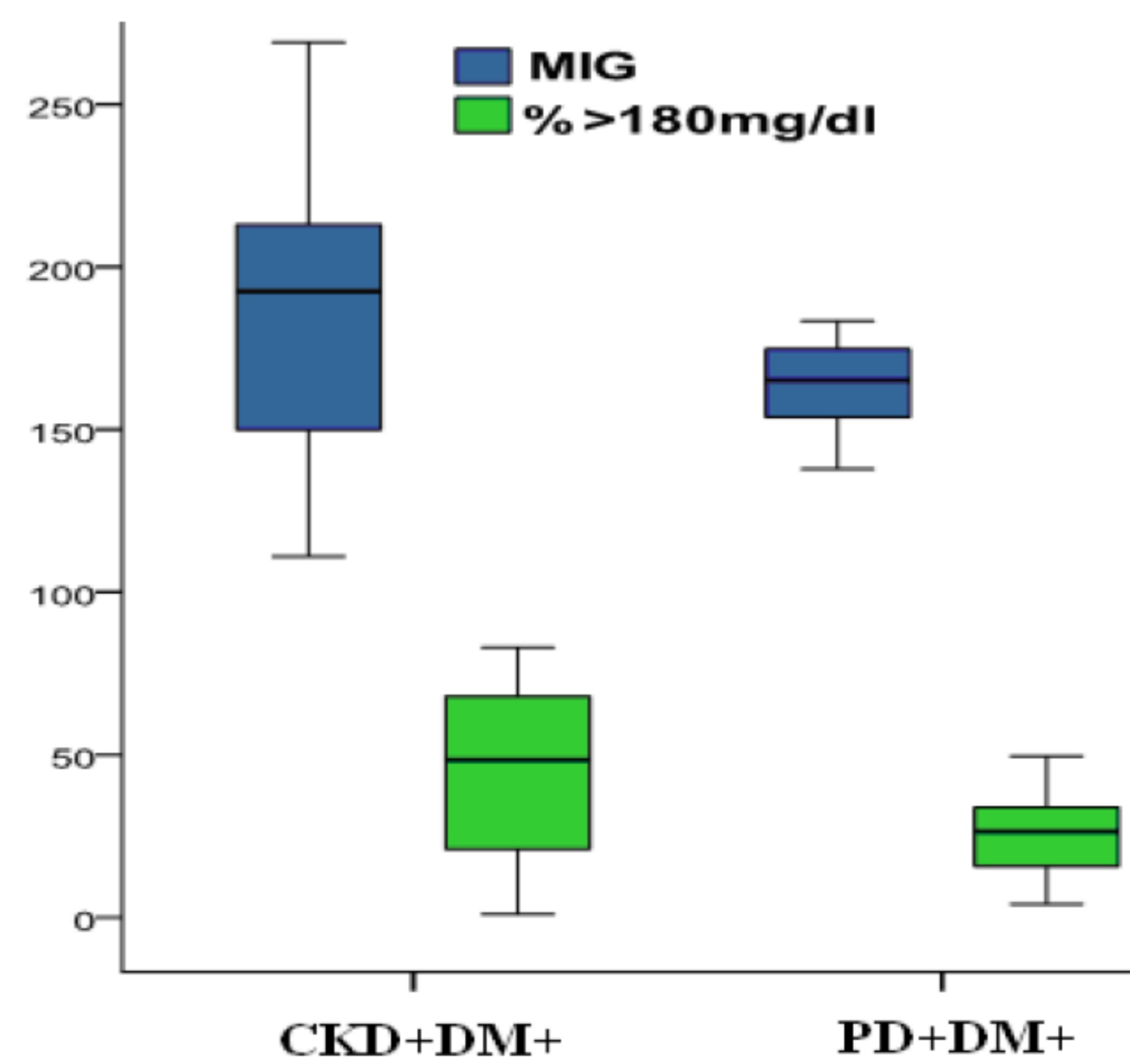
Analyzed parameters:

- MIG (Mean interstitial glucose),
 - HbA1c,
 - MAGE (mean amplitude of glycemic excursions),
 - MODD (mean of daily differences),
 - Percentage of time that were recorded blood glucose >180 mg/dl
 - Percentage of time that patients had blood glucose < 70 mg/dl.
- SPSS 17 was used for statistical analysis.

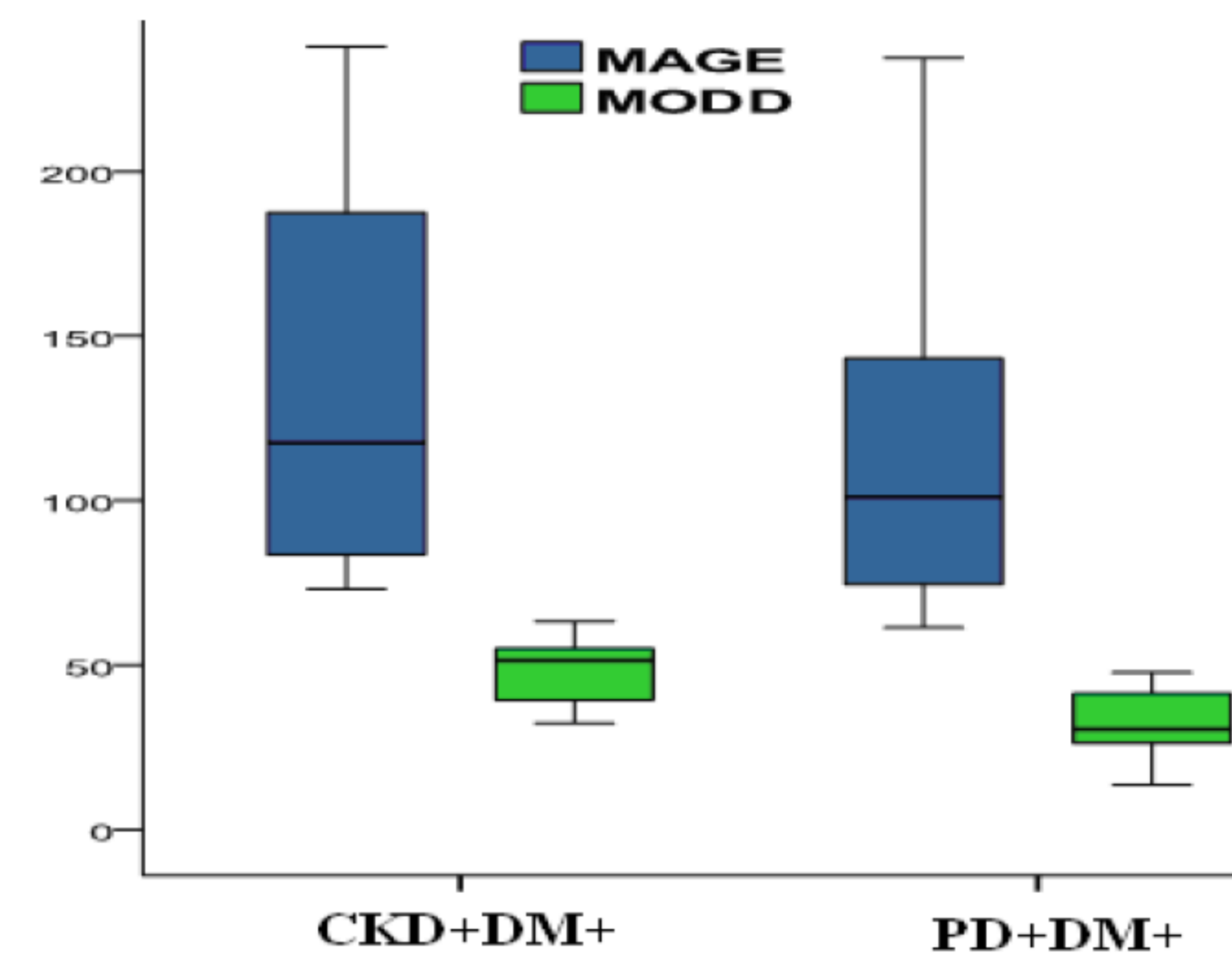
Results

Parameters	CKD+DZ+ (n=15)	DP+DZ+ (n=11)
HbA1c (%)	7.4±0.96	6.7±1.1
MIG (mg/dl)	187.7±57.2	150.6±15.1
%>180(mg/dl)	51.8±37.2	16.9±11.6*
%<70(mg/dl)	5.3±1.8	0.9±0.2
MAGE (mg/dl)	126.3±46.1	100.08±39.5
FD	1.2±0.04	1.5±0.08*
MODD (mg/dl)	48,36±10,4	35.2±14.5*

Results

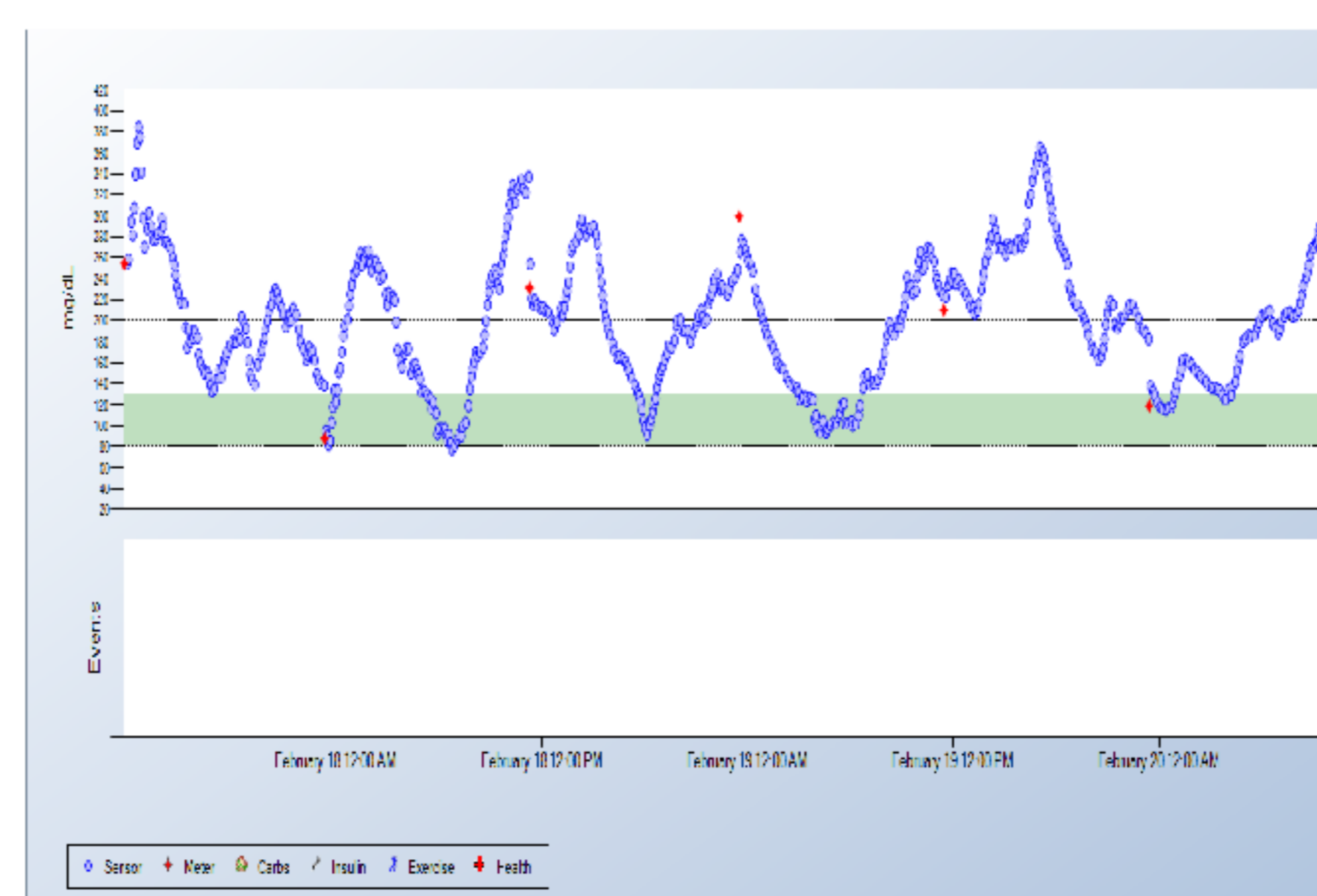
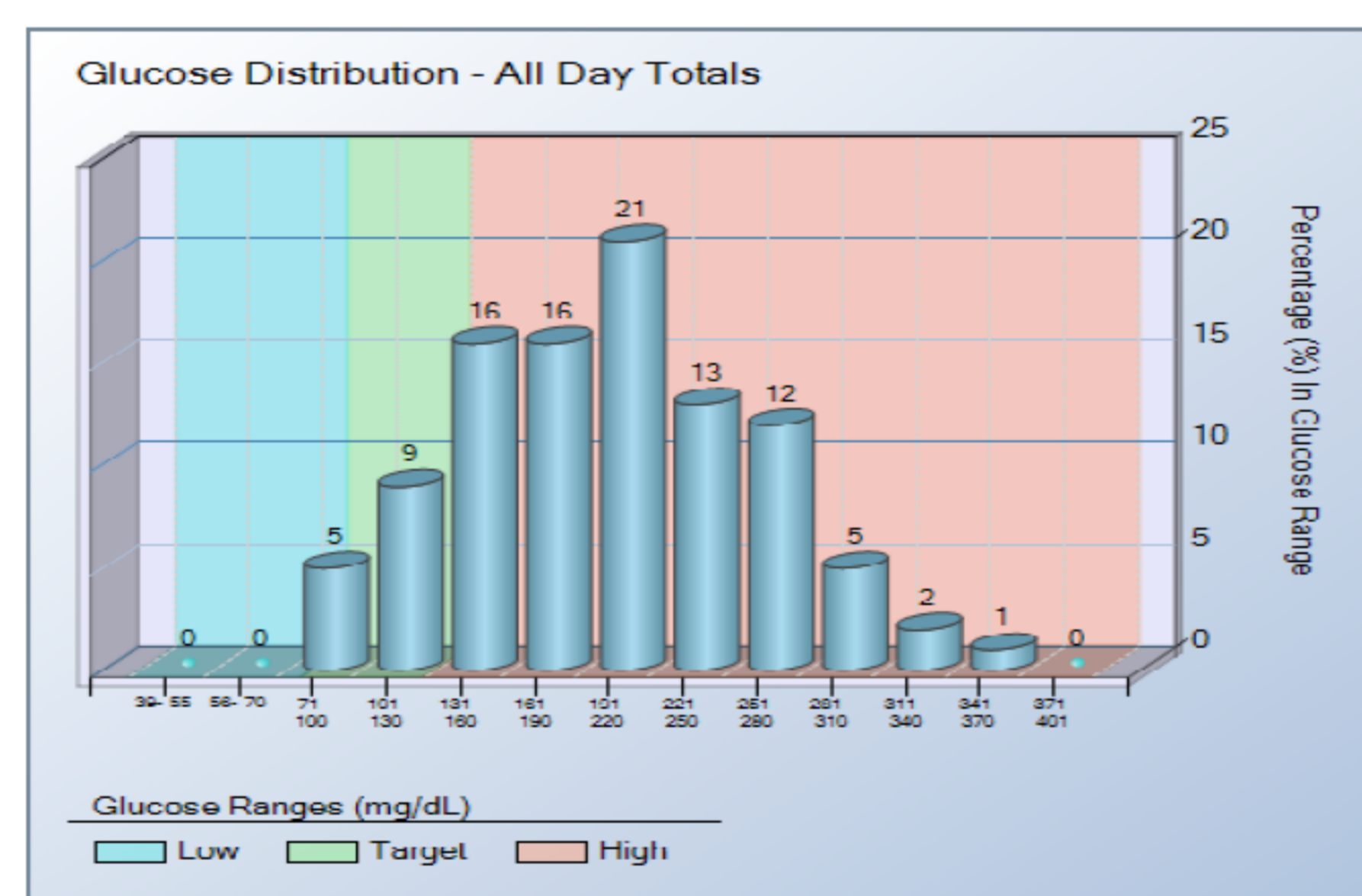


Box plot indicated MIG & %>180 mg/dl distribution in CKD vs PD patients



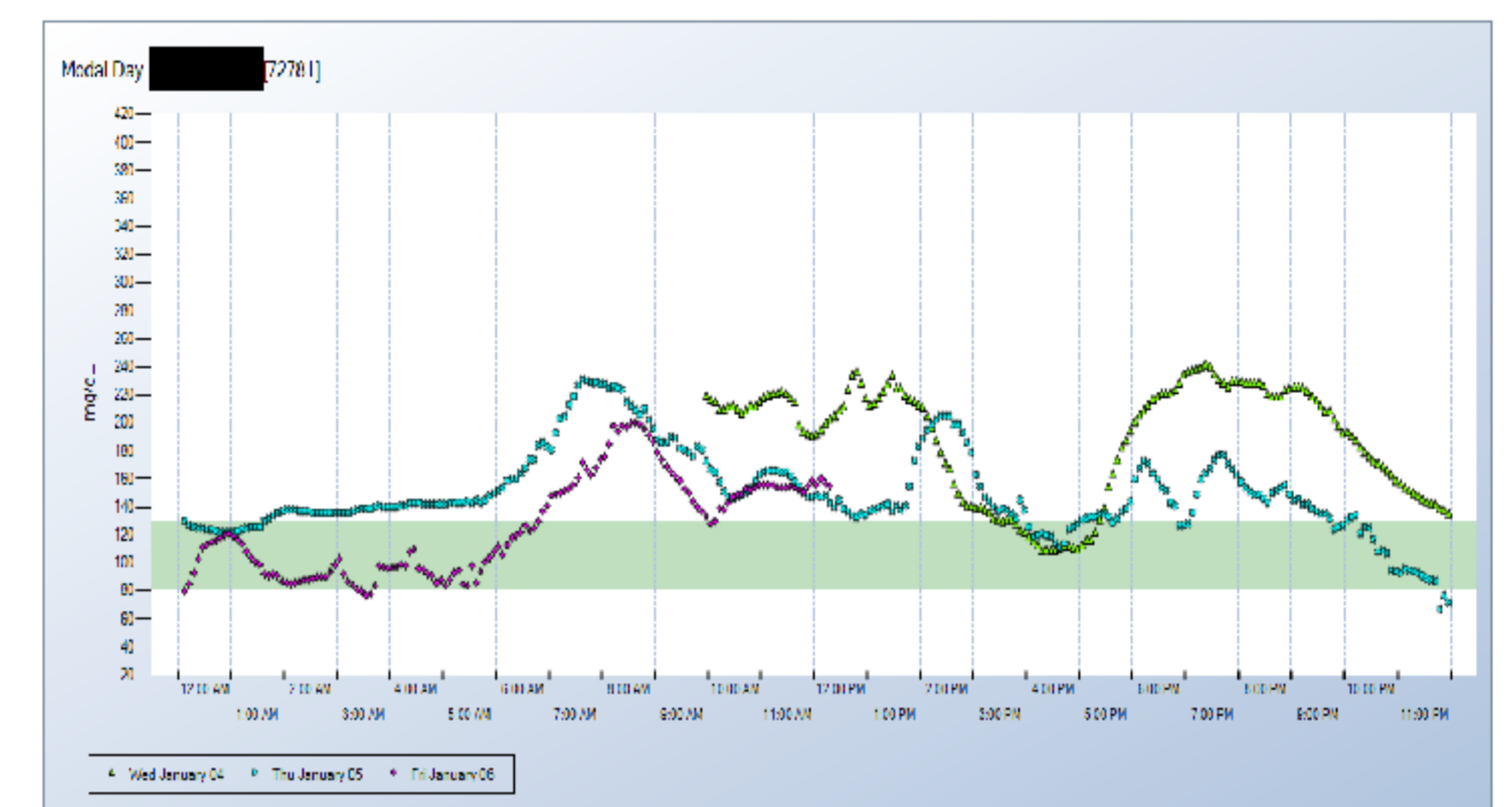
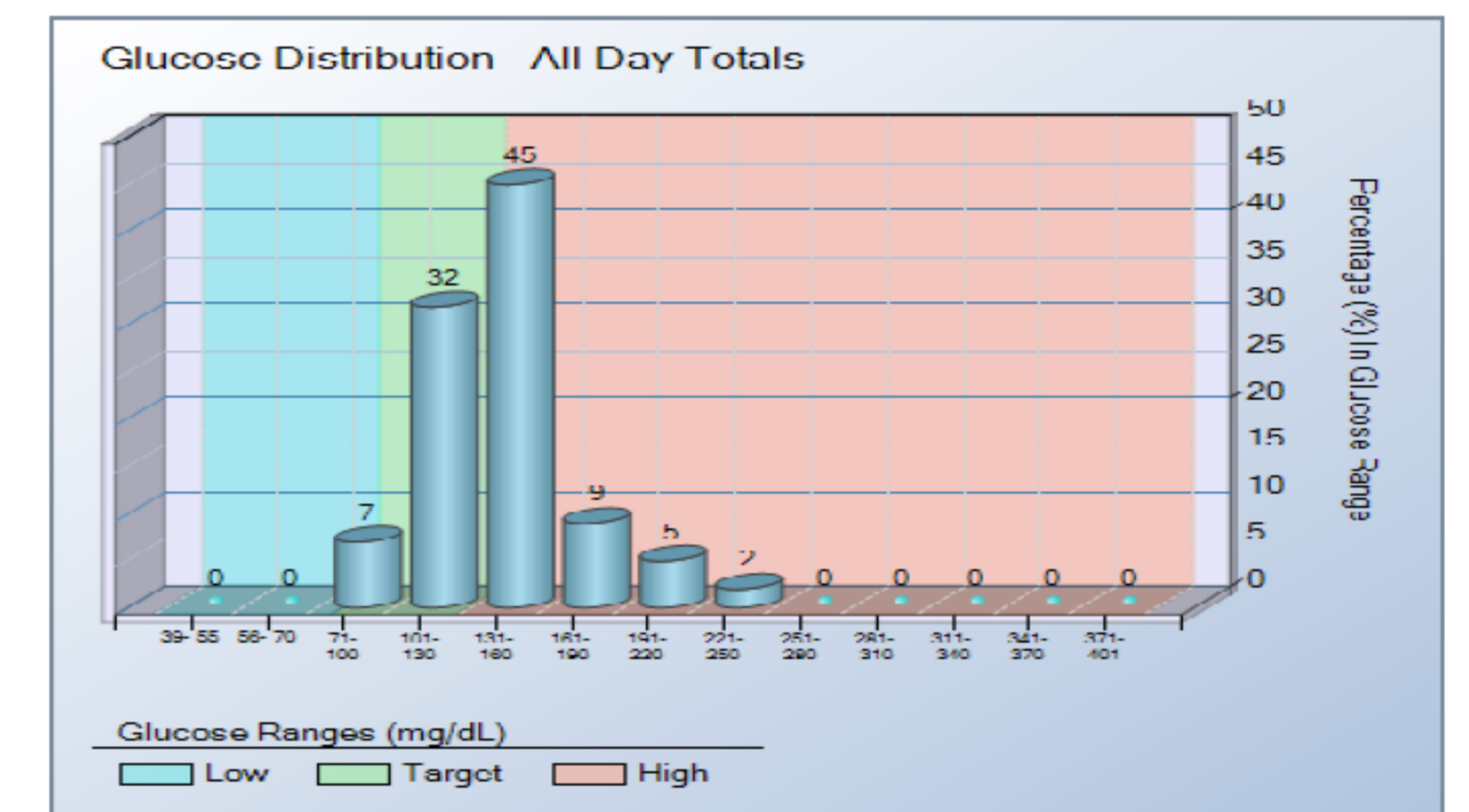
Box plot indicated MAGE & MODD distribution in CKD vs PD patients

Representative CGMS registration CKD patient



Results

Representative CGMS registration PD patient



Conclusions

Peritoneal dialysis improves glycemic control in uremic diabetic patients probably by decreasing insulinresistance in these patients.

Diabetic PD patients had more low amplitude and high frequency glycemic oscillations (FD) but a lower inter day glycemic variability (MODD) compared to diabetic CKD patients.

References

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3. Vos FE, Schollum JB, Coulter CV, Manning PJ, Duffull SB, Walker RJ. Assessment of markers of glycaemic control in diabetic patients with chronic kidney disease using continuous glucose monitoring. Nephrology (Carlton) 17: 182 -188, 2012.

