

PERITONEAL DIALYSIS - RISK FACTOR FOR GLYCEMIC VARIABILITY



Cristina Văduva*, Simona Popa**, Maria Moța**, Eugen Moța***

Haemodialysis Center, Emergency Hospital Craiova, IHS Craiova, ** Clinical Centre of Diabetes, Nutrition, Metabolic Diseases, University of Medicine and Pharmacy Craiova, *** Nephrology Department, University of Medicine and Pharmacy Craiova

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BACKGROUND

In patients with chronic kidney disease insulin resistance is a quasi-permanent associated condition which is a fundamental cause of type 2 diabetes mellitus and atherosclerotic vascular disease.

Glucose daily load in peritoneal dialysis (PD) patients is an additional risk factor for metabolic disorders in these patients.

Aims of study is to analyze the influence of peritoneal dialysis on glycemic variability certain indices recorded by CGMS (continuous glucose monitoring system) in non diabetic uraemic patients on peritoneal dialysis vs healthy subjects.

METHODS

We have studied 23 subjects: 9 non diabetic PD patients (4 M, 5 F) and 14 volunteers healthy subjects (3 M, 11 F). All PD patients were adequately dialyzed with $Kt/V > 1.7$. Patients had different dialytic treatment regimens, four of them used Icodextrine in nocturnal exchange and four had only glucose 1.36% for all exchanges. CGMS was performed in all subjects over a period of 72 hours using the DexCom SEVEN CGMS device.

Analyzed parameters:

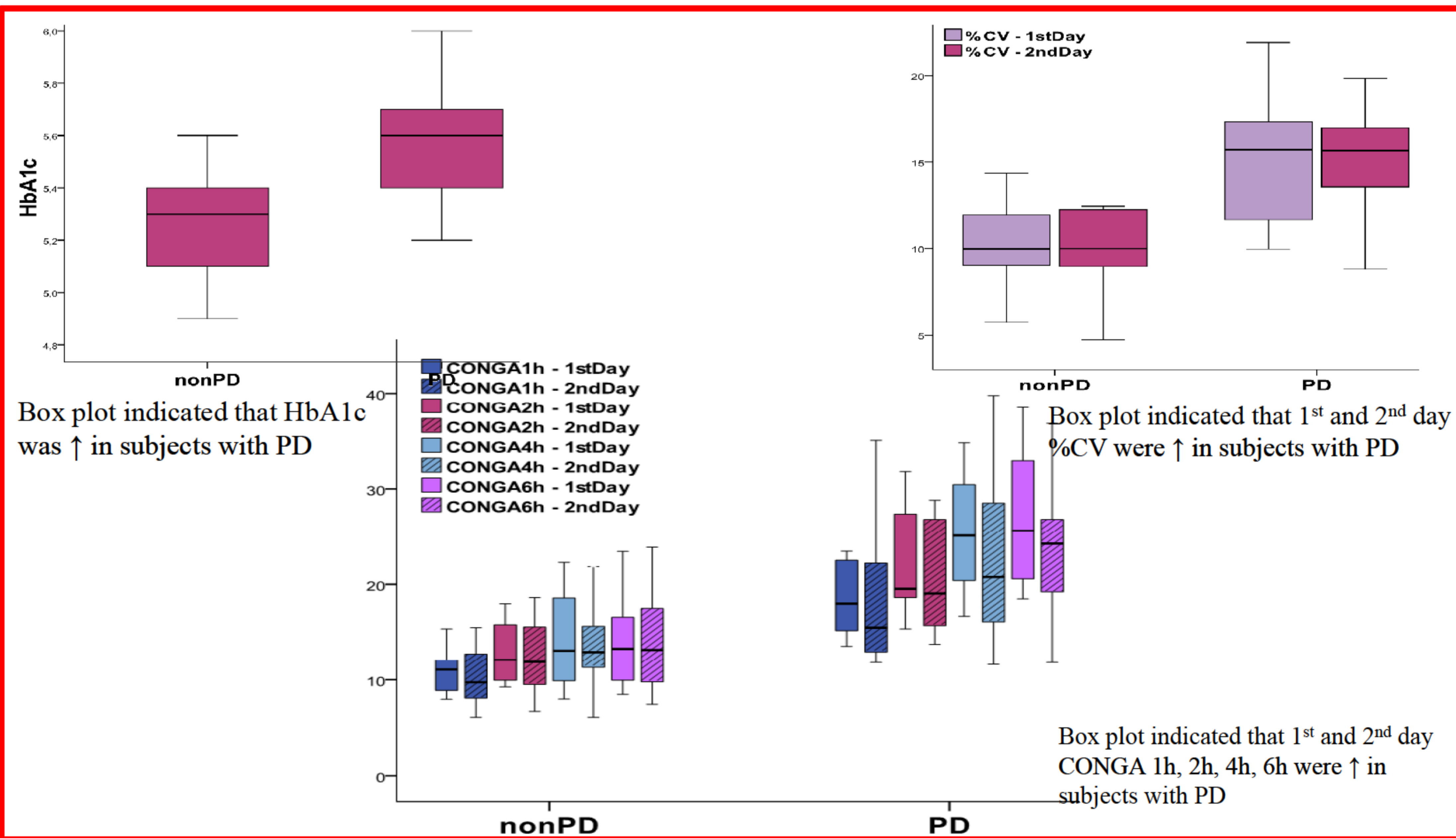
- HbA1c
 - mean interstitial glucose (MIG)
 - standard deviation (SD)
 - % CV - percentage coefficient of variation calculated as $SD / \text{glucose mean ratio}$
 - CONGA (Continuous overall net glycemic action) 1h, 2h, 4h or 6h – assessing glycemic variability in predetermined time window.
- CGMS parameters were analyzed in two consecutive days of recording.

RESULTS

PATIENTS CHARACTERISTICS

Variables	nonPD	PD
	Mean±SD	Mean±SD
	1 st Day	2 nd Day
Age	31,2±5,1	60,2±8,4*
BMI	22,8±2,0	28,6±4,6*
HbA1c	5,3±0,2	5,6±0,3*
DP age	-	4,4±2,0
GDL	-	98,7±17,2
Mean - 1stDay	99,7±11,1	118,3±13,8*
Mean - 2ndDay	100,3±9,5	121,8±17,3*
SD - 1stDay	10,5±3,0	18,1±4,8*
SD - 2ndDay	10,5±4,3	18,0±4,8*
%CV - 1stDay	10,5±2,9	15,3±3,8*
%CV - 2ndDay	10,4±3,6	14,8±3,4*
CONGA1h - 1stDay	10,9±2,2	18,4±3,7*
CONGA1h - 2ndDay	10,3±2,8	18,9±8,0*
CONGA2h - 1stDay	12,9±3,1	23,0±5,8*
CONGA2h - 2ndDay	12,3±3,6	23,3±10,5*
CONGA4h - 1stDay	14,0±5,0	25,6±6,2*
CONGA4h - 2ndDay	14,0±4,5	23,5±9,6*
CONGA6h - 1stDay	14,2±4,9	27,3±7,3*
CONGA6h - 2ndDay	13,7±4,6	24,3±8,5*

RESULTS



CONCLUSION

Non-diabetic uraemic PD patients had both higher glycemic variability and metabolic disorders more emphasized compared with healthy subjects, these differences can be explained at least in part by daily intake of glucose.

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