

“VARIABILITY OF BLOOD PRESSURE ALONG DIALYSIS. RELATION WITH MORTALITY”



Servicio Canario de Salud

Eduardo Baamonde Laborda , Nicanor Vega Diaz, Elena Oliva Dámaso , Patricia Perez Borges, Nestor Oliva Dámaso, Roberto Gallego Samper, Silvia Marrero Robayna, Yanet Parodis Lopez , Liliانا Moran Caicedo, José Carlos Rodriguez Perez .

Department of Nephrology

Hospital General Universitario de Gran Canaria “Dr. Negrin”



INTRODUCTION AND OBJECTIVE

Recent studies, link hemodialysis systolic blood pressure variability (BPV) and mortality.

However BPV can be seen with different blood pressure components, including systolic and diastolic as well as predialysis, intradialysis and postdialysis blood pressure (BP).

Aims: To analyze blood pressure variability in different measurements during hemodialysis (HD) sessions and verify which of them predict mortality in incident patients.

MATERIAL AND METHODS

- **Retrospective** analysis
- N: 277 incident patients.
- Conventional HD (3 times/week).
- Systolic and diastolic BP records were collected before and after hemodialysis in the first 6 months from the beginning of treatment.
- BPV was calculated using the coefficient of variation (CV).
- Demographic and clinical data were analyzed during a 24 month period as well as mortality rate.
- Survival analysis (Kaplan-Meier and Cox proportional hazards) was performed by stratifying patients in tertiles (T) of BPV.

RESULTS

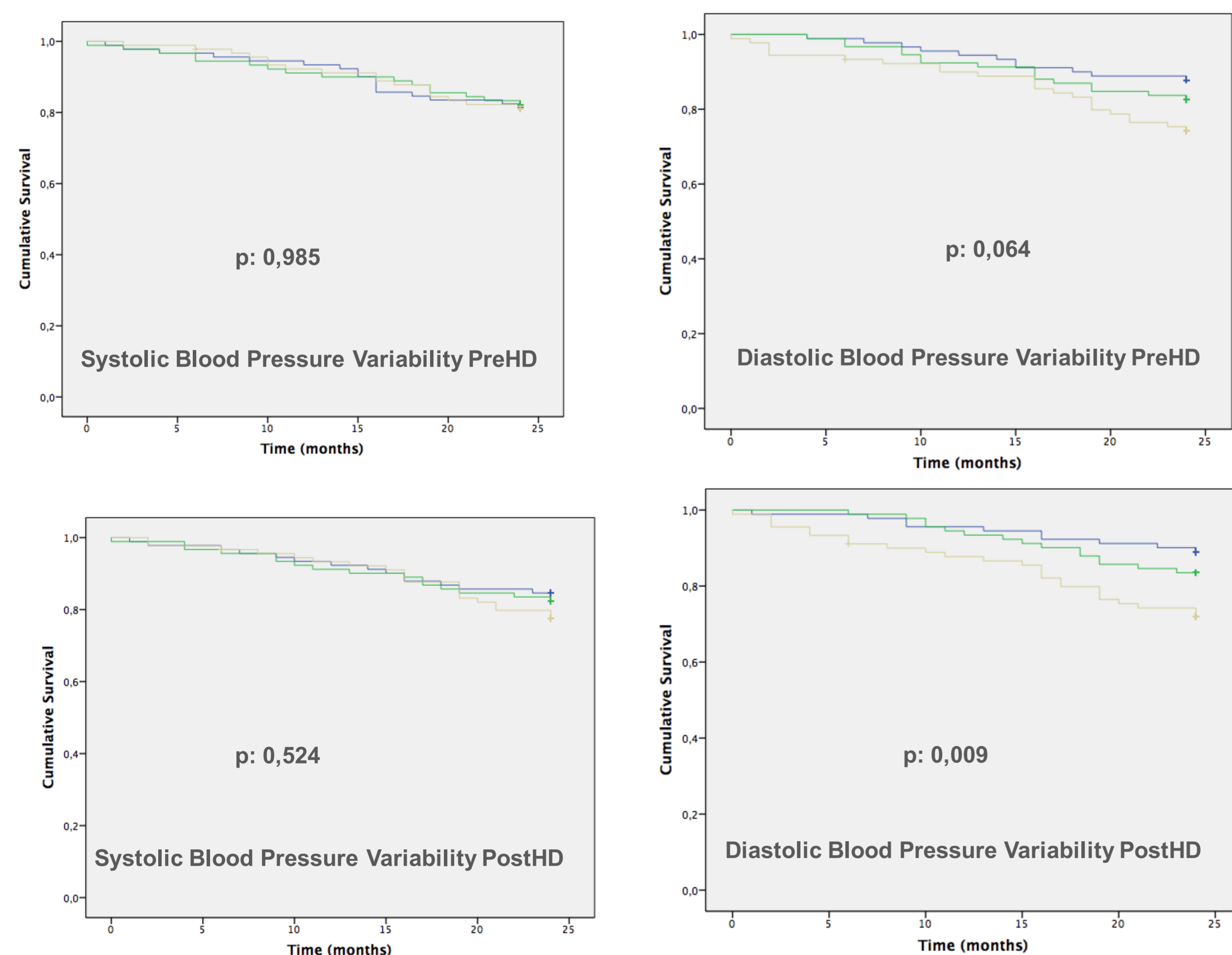
Demographics and clinical characteristics

	Patients n= 277
Age (years) median \pm SD	65,1 \pm 13
Male (%)	67,1
Time on dialysis (months) median \pm SD	22 \pm 5,1
Diabetes (%)	45,8
Hypertension (%)	87,2

Average values in the baseline study

Value	Mean \pm STD
SBP (mmHg) (pre HD)	137,6 \pm 14,5
DBP (mmHg) (preHD)	73,33 \pm 6,85
Systolic BPV pre HD (%)	11,5 \pm 3,7
Diastolic BPV pre HD (%)	12,1 \pm 7,75
Systolic BPV post HD (%)	11,2 \pm 3,04
Diastolic BPV post HD (%)	13,5 \pm 14,9
Ultrafiltration rate (ml/Kg/h)	5,37 \pm 3,26
Sodium (mEq/L)	138,13 \pm 2,49
Albumin (gr/dL)	3,69 \pm 0,26
Hb (gr/dL)	11,57 \pm 3,12
PTHi (pg/ml)	222,3 \pm 150,16

Survival analysis according to tertiles of Blood Pressure Variability Kaplan-Meier



Stratification of BP by Tertiles

	T1	T2	T3
CV (%) SBP preHD	< 10,01	10,02-11,85	> 11,86
CV (%) SBP postHD	< 9,93	9,94-11,98	> 11,99
CV (%) DBP preHD	< 10,45	10,46-12,04	> 12,05
CV (%) DBP postHD	< 9,93	9,94-11,75	> 11,76

Cox proportional Hazards analysis

Risk Factor	Parameter estimate	P-Value	Hazard Ratio (HR) (95% CI for HR)
Diabetes Mellitus	-0,128	0,880	0,872 (0,489-1,554)
Age	-0,011	0,289	0,990 (0,971-1,010)
Male Sex	0,104	0,734	1,037 (0,567-1,896)
DBPV post HDT1	Reference	Reference	Reference
DBPV postHD T2	0,413	0,313	1,511 (0,678-3,368)
DBPV post HD T3	0,996	0,009	2,708 (1,286-5,703)

CONCLUSIONS

- In our study we observed and increased risk of mortality in patients with higher diastolic blood pressure variability, especially those with greater variability post hemodialysis.
- We did not observe this increase in mortality in other analyzed parameters.

REFERENCES:

Magdalene M. Assimon et al, Ultrafiltration Rate and Mortality in Maintenance Hemodialysis Patients, *Am J Kidney Dis.* 2016;68(6):911-922.
Assimon MM, Flythe JE. Intradialytic blood pressure abnormalities: the highs, the lows and all that lies between. *Am J Nephrol.* 2015;42(5):337-350.

