

# SEVERITY OF LEFT VENTRICULAR HYPERTROPHY AND CARDIOVASCULAR MORTALITY IN END-STAGE RENAL FAILURE PATIENTS UNDERGOING PERITONEAL DIALYSIS AND HEMODIALYSIS.

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## Introduction:

Cardiovascular disease is a major cause of death in dialysis patients, accounting over 40% of the mortality and is considerably higher than that of the general population.

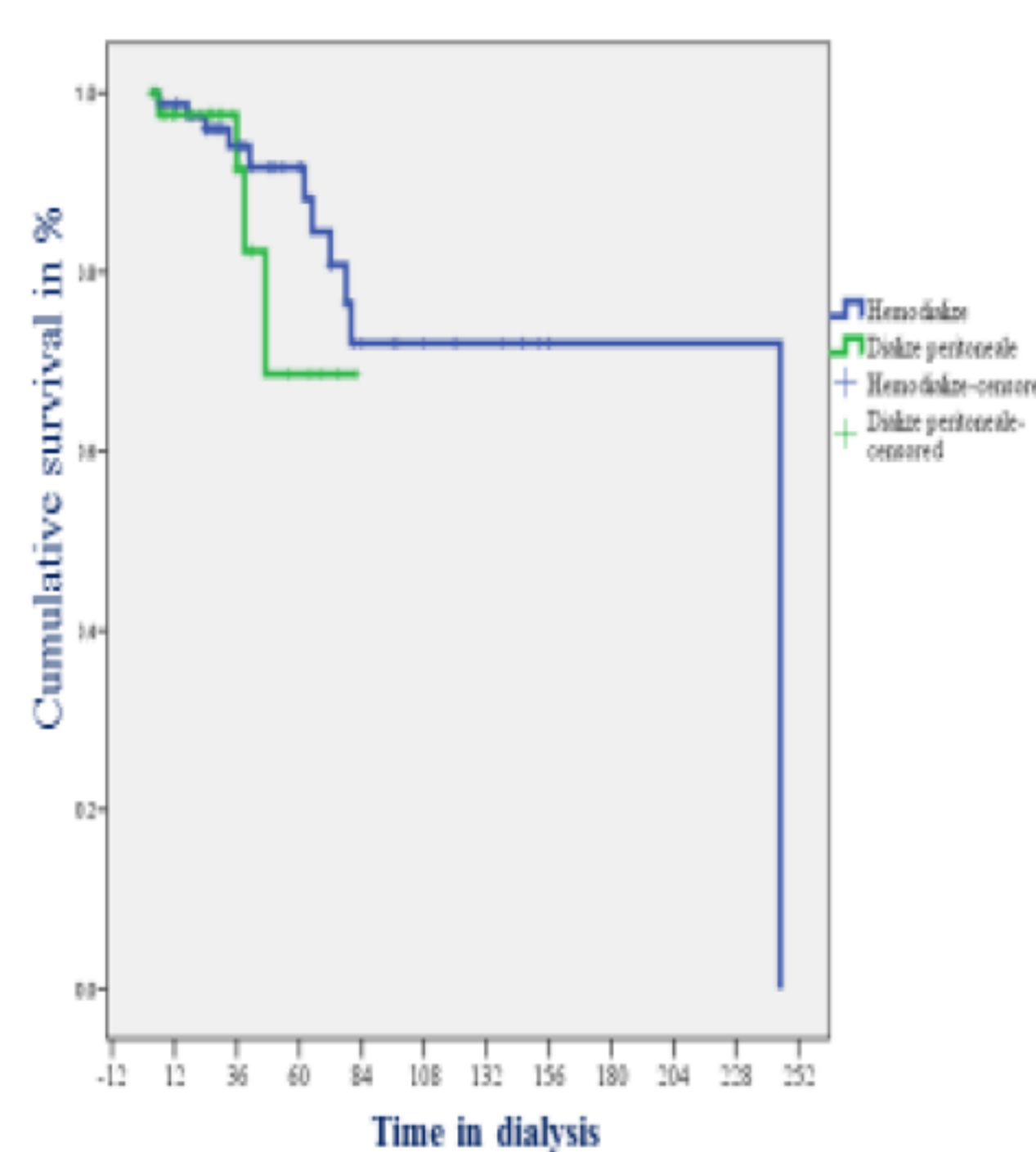
The aim of this study was to evaluate the prevalence of ventricular geometry and the mortality of patients with end stage renal disease on peritoneal and hemodialysis treatment.

## Methods:

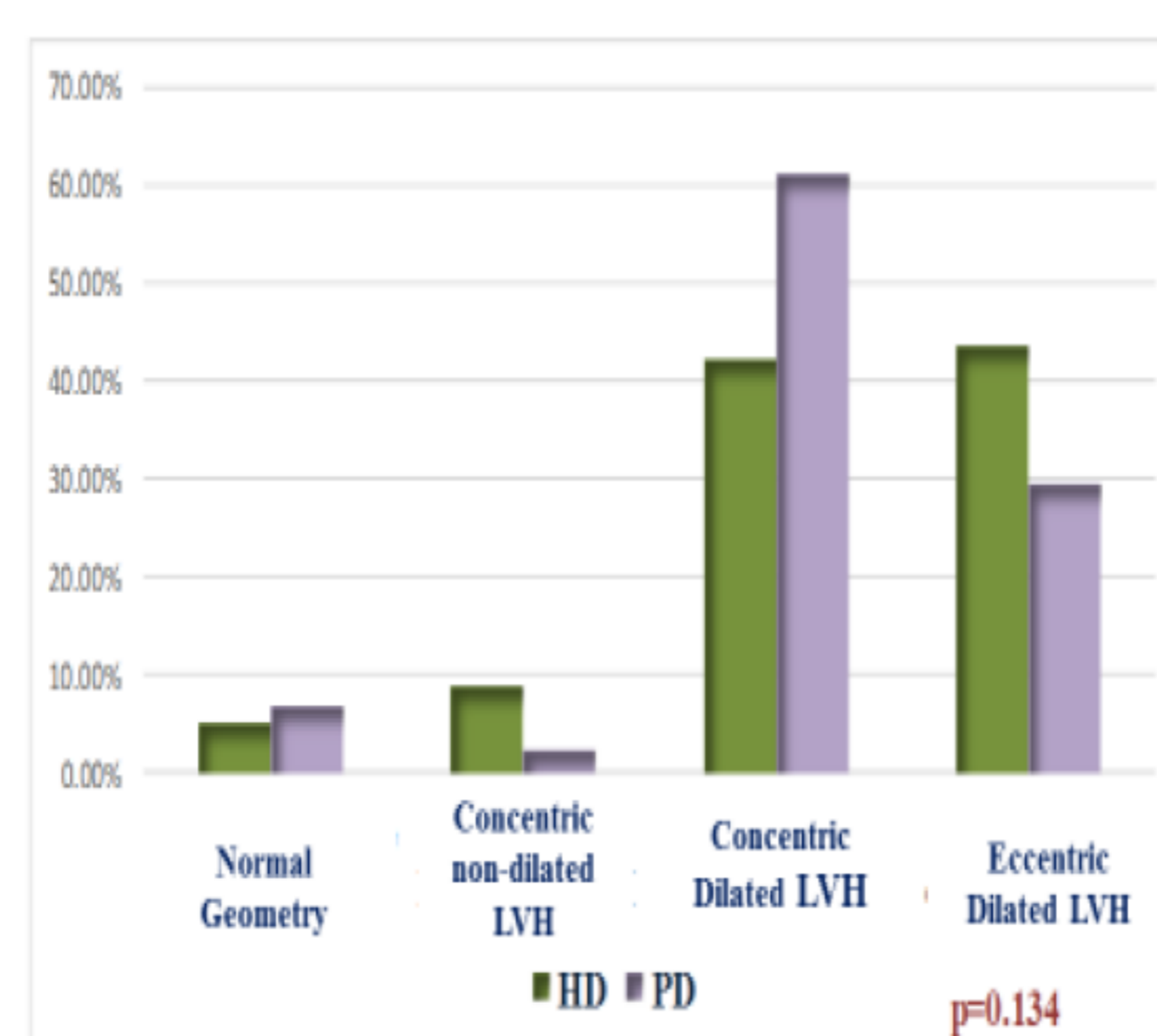
A case control study was conducted from January 2011 - December 2012, enrolling all patients on chronic dialysis (HD and PD) older than 18 years who had more than 3 months in therapy. Two-dimensional echocardiography was performed by a single experienced cardiologist who was blinded to all clinical details of patients. The echocardiography was performed 2-24 h after the dialysis session, and the measurements of diameters and volumes were done according to AEE recommendation.

## Results:

Our dialysis population studied consisted in 122 pts, 78 pts (61%) on hemodialysis, mean age 53.4±14.5 years and mean time on therapy was of 40.4 ± 14.4 months. PD pt were older and have lower time in therapy. Concentric hypertrophy was found in 42.3% of the pts in HD and 61.4% of pts in PD (p=0.058) and eccentric hypertrophy in 43% of HD pts and in 29.5% of PD pts (p>0.07). There were significantly increasing pulse pressure, and higher CRP across the three groups with increasing LVM-i. Pulse pressure was independent risk factors associated with LVM-i [1.04 (0.99-1.09) p<0.05]. Cardiovascular mortality during follow up was 15.5% (19 events). It was not found significant difference in CV mortality in patients on PD and HD, [log rank Mantel- Cox (p=0.364)]. The main causes of CV death were sudden deaths (31.5%), deaths from ischemic heart disease and stroke with 26.4% respectively. Binary logistic regression analysis showed that CRP [OR= 1.06 (1.01-1.10) p=0.011], CaxP product [OR1.11 (1.01-1.22) p=0.033 and LVM-i [OR=1.03 (0.68-0.98) p=0.029] were independent risk factors for cardiovascular mortality in dialysis patients.



CV survival in HD and PD patients



Ventricular geometry in HD and PD patients

## Risk factors in LVH

Variable	Modeli 1 §		Modeli 2 ‡	
	OR (95% CI) *	P-Value	OR (95% CI)	P value
Gender	2.03 (0.62-6.70)	0.245	2.05 (0.52-8.03)	0.302
Age	1.01 (0.97-1.05)	0.769	1.01 (0.96-1.07)	0.628
Vintage	1.00 (0.98-1.02)	0.875	1.00 (0.98-1.02)	0.818
Diabetes	1.77 (0.37-8.37)	0.471	4.15 (0.42-51.1)	0.224
BMI	0.96 (0.84-1.09)	0.502	0.94 (0.80-1.09)	0.400
PP	1.03 (0.99-1.07)	0.099	<b>1.04 (0.99-1.09)</b>	<b>0.045</b>
RRF	1.02 (0.76-1.35)	0.912	0.68 (0.39-1.18)	0.176
Albumine	0.44 (0.13-1.51)	0.194	1.81 (0.25-13.1)	0.556
CRP	1.02 (0.94-1.11)	0.580	1.06 (0.94-1.19)	0.343
Hb	1.24 (0.85-1.79)	0.257	1.14 (0.73-1.81)	0.898
CaxP	0.99 (0.95-1.03)	0.701	1.00 (0.95-1.04)	0.898
PTH	1.00 (0.99-1.00)	0.604	1.00 (0.99-1.00)	0.671
Therapy (DP)	1.81 (0.54-5.92)	0.331	5.70 (0.46-70.9)	0.176

§ Modeli 1: Crude analysis, OR and 95% CI.

‡ Modeli 2: adjusted for all the factors in the table.

## Conclusions:

We didn't found significant difference in ventricular geometry between two dialysis modalities. Concentric hypertrophy is the most frequent left ventricular geometry in patients treated with PD. LVH, inflammation and CaxP product are interrelated and combine adversely to increase mortality and cardiovascular death risk of dialysis patients

