RENAL FUNCTION TRAJECTORY IN CHRONIC KIDNEY DISEASE PATIENTS: RESULTS OF A REAL-LIFE STUDY

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INTRODUCTION

The HIPERDIA Minas Center (CHDM/JF) is a secondary prevention program established by the Health Secretary of the State of Minas Gerais, Brazil runned by by the Nephrology Unit of the Federal University of Juiz de Fora. The CHDM/JF offers free interdisciplinary care, medications and exams, for hypertensive patients with high cardiovascular risk, diabetic patients (all type 1 and type 2 with poor metabolic control) as well as patients with CKD stages 3b to 5 and/or with decline of estimated glomerular filtration rate (eGFR) >4 mL/min/year.

OBJECTIVE

Our aim was to determine the renal function trajectory in CKD patients attending an interdisciplinary prevention Program in Brazil.

METHODS

- Trajectory of eGFR of 934 patients with CKD referred to CHDM/JF between August of 2010 and September of 2012
- Clinic and laboratory data were obtained from the electronic data base system. eGFR was estimated from creatinine using the MDRD equation
- CKD was defined when eGFR was <60ml/min/1.73m² or >60 ml/min/1.73m² in the presence of albuminuria and/or hematuria for a minimum of 3-months. According to eGFR trajectory over the follow up period, patients were stratified:
  - non-progressors (GFR did not decrease or even increased over the time)
  - slow-progressors (GFR decreased up to 4 ml/min/yr)
  - fast-progressors (GFR decreased >/ 4 ml/min/yr).

RESULTS

Table 1- Patient characteristics at enrollment, by stages of CKD

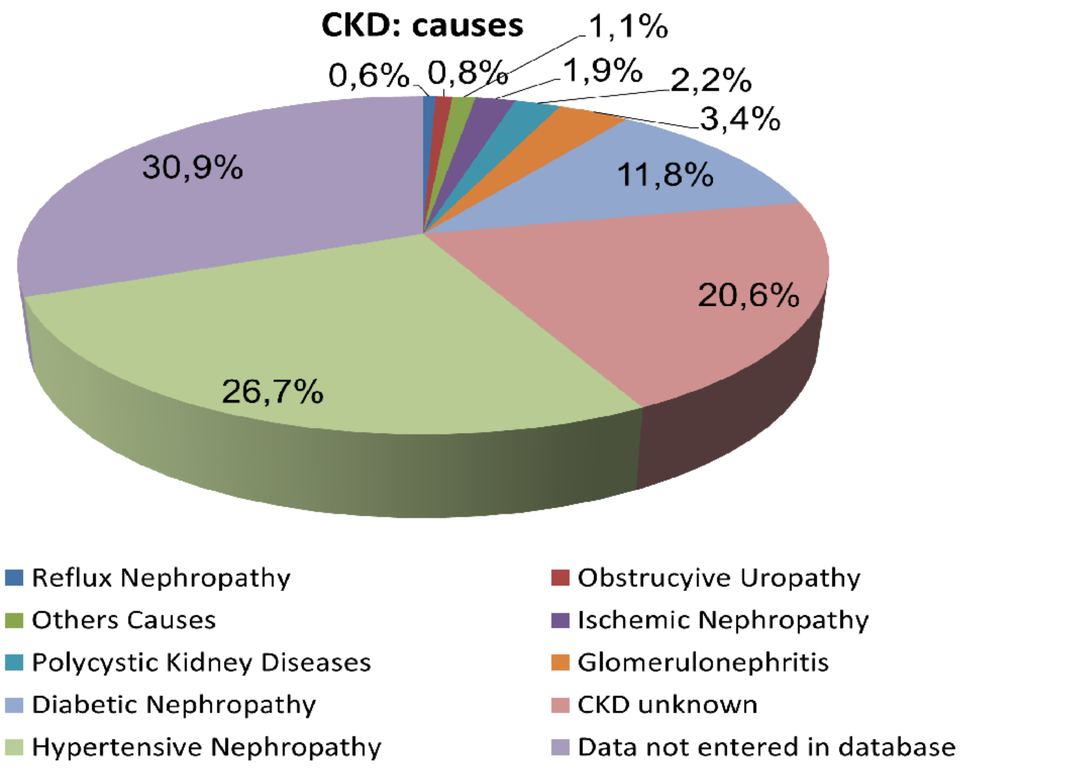
Variable	CKD Stage 3 (n= 525)	CKD Stage 4 (n=307)	CKD Stage 5 (n=74)
Demographics			
Age	63 (±14.0)	68 (± 13.0)	65 (±12.2)
Gender: Male	294 (56.0%)	154 (50.2%)	35 (47.3%)
No Black	367 (69.9%)	228 (74.3%)	63 (85.1%)
Clinical			
Body Mass Index (obesity)	59 (65.6%)	26 (28.9%)	5 (5.9%)
Systolic Blood Pressure (≥ 140 mmHg)	307 (58.0%)	177 (33.5%)	45 (8.5%)
Dyastolic Blood Pressure (≥ 90 mmHg)	238 (62.3%)	113 (29.6%)	31 (8.1%)
Comorbidities			
Hypertension	469 (89.3%)	289 (94.1%)	70 (94.6%)
Diabetes	193 (36.8%)	115 (37.5%)	26 (35.1%)
Cardiovascular Disease	153 (29,1%)	148 (48,2%)	31 (41,9%)
Peripheral Artery Disease	41 (40.6%)	37 (47.4%)	10 (71.4%)

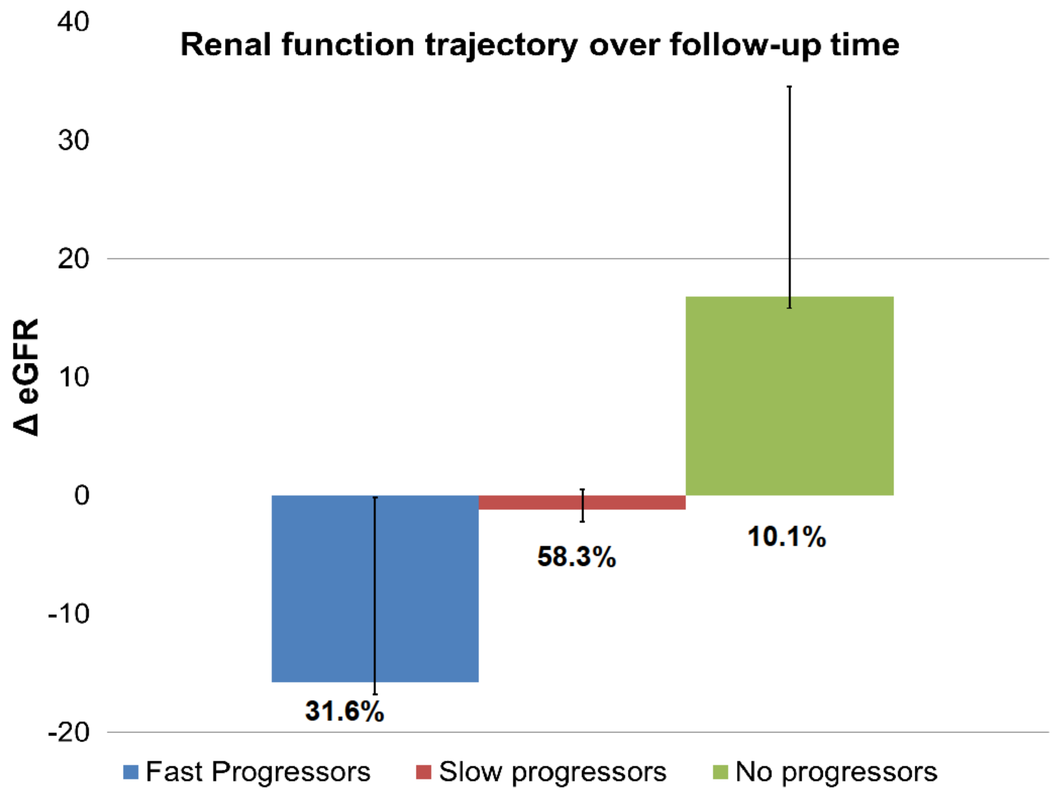
Stage 3: eGFR ≥ 30 ml/min/1.73m²; Stage 4: 15 ≤ eGFR < 30 ml/min/1.73m²; Stage 5: eGFR < 15 ml/min/1.73m².

Table 2 – Baseline predictors of patient-specific eGFR slope over follow-up time.

	Predicting eGFR Slope (Linear Regression)	
	Odds Ratio	p - value
Body surface area	0.012	0.007
Proteinuria > 150 mg/24h	0.013	0.009
Baseline eGFR	0.042	<0.001
ACE inhibitor use	0.007	0.033

Sample size reduced due to missing Body surface area (n=66), Proteinuria > 150 mg/24h (n=313), Baseline eGFR (n=77).





CONCLUSION

Our findings in this real-life retrospective study revealed that two-third of our patients presented a stable or slow decline of eGFR, suggesting the effectiveness of the interdisciplinary team on the management of this high risk group of CKD patients when free care is available.

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