

CLINICAL CHARACTERISTICS OF APPARENT TREATMENT-RESISTANT HYPERTENSION IN CHRONIC KIDNEY DISEASE PATIENTS EVALUATED BY 24 HOUR AMBULATORY BLOOD PRESSURE MONITORING

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Introduction

Apparent treatment-resistant hypertension is hypertension which remains uncontrolled by the use of three or more antihypertensives, or controlled hypertension which requires use of 4 or more medications. In patients with chronic kidney disease (CKD), resistant hypertension is more frequent and 24 hour blood pressure monitoring is the best tool for assessment of blood pressure in this group of patients, but little is known about the clinical characteristics and blood pressure patterns in this subgroup. The objective of this study was to assess 24-hour blood pressure monitoring in patients with chronic kidney disease and apparent treatment-resistant hypertension and their clinical characteristic and blood pressure monitoring patterns.

Material and methods

This was a retrospective study of the outpatient chronic kidney disease patients and hypertension, carried out in the Department of Nephrology. Patients with chronic kidney disease (CKD - eGFR<60 ml/min but >15 ml/min) and essential hypertension (No CKD), who had 24-hour ABPM, were evaluated for their clinical and blood pressure monitoring characteristics. Patients were divided into two groups: apparent treatment-resistant hypertension and other hypertension (hypertension controlled with two or less antihypertensives).

	CKD	No CKD	χ^2/t -test
Number	40	40	
Males	47%	53%	P <0.05
Age (years)	63 ± 5	61 ± 7	NS
Target organ damage on other organs	60%	72%	P <0.05
Serum creatinine	216 ± 137	72 ± 17	P <0,01
Creatinine clearance	49 ± 21	115 ± 26	P <0,01

Table 1. Clinical characteristics in CKD vs non CKD groups

	CKD	No CKD	χ^2 -t-test
Average daily systolic blood pressure (mmHg)	149 ± 18	137 ± 15	P <0.001
Average nightly diastolic blood pressure (mmHg)	87 ± 14	82 ± 10	NS
Average daily systolic blood pressure (mmHg)	125 ± 27	118 ± 25	NS
Average daily diastolic blood pressure (mmHg)	81 ± 16	82 ± 15	NS

Table 3. 24 hour blood pressure characteristics in CKD vs non CKD groups

CKD	RH+	RH-	P
Average nr. of medications	4.3	1.8	P <0.05
Age (years)	55 ± 15	47 ± 16	NS
dSBP	158 ± 26	132 ± 16	P <0.05
dDBP	92 ± 13	86 ± 14	NS
nSBP	139 ± 27	131 ± 15	P <0.05
nDBP	90 ± 10	88 ± 12	NS
Absent night dipping of BP	20%	12%	P <0.05
Serum creatinine	197 ± 134	125 ± 91	P < 0.05
Creatinine clearance	50 ± 24	59 ± 21	P <0.05

Table 5. Clinical characteristics of resistant hypertension vs. non-resistant HT in CKD group

	CKD	No CKD	χ^2 -t-test
Number	40	40	
Resistent hypertension	42%	39%	P <0.05
Absent night dipping	20%	12%	P <0.05
Controlled hypertension (<135/85 mm Hg)	24%	45%	P <0.05

Table 2. Resistent HT, absent night dipping, controlled HT in CKD vs non CKD

	CKD	No CKD	χ^2 -t-test
Number of pts.	40	40	
Number of medications	2,8 ± 0.7	2.1 ± 0.3	NS
One medication	16%	17%	NS
Two medications	24%	25%	NS
Three medications	16%	35%	P <0.05
Four medications	21%	5%	P <0.05
Five medications	5%	0%	P <0.05
Unknown	18%	19%	NS

Table 4. Use of antihypertensives in CKD vs non CKD

Conclusions

Apparent treatment-resistant hypertension in CKD patients is quite frequent, requires more antihypertensive medications and is associated with higher BMI, proteinuria and non-dipping status. This subgroup of patients is expected to have a more advanced CKD and requires more efforts for achieving target blood pressure.