

PREVALENCE OF PRIMARY ALDOSTERONISM AMONG HYPERTENSIVE POPULATION IN TRABZON CITY, TURKEY

**Ekrem Algun, Omer Incecayir, Inan Anaforoglu,
Kerem Ersoy, Semiha Ayhan**
Department of Endocrinology and Metabolism,
Trabzon Kanuni Education and Research Hospital, Trabzon, Turkey



Introduction

There have been no studies on the prevalence of primary aldosteronism (PA) in Turkey. In this study, the prevalence of PA among the hypertensive population was investigated.

Method / Design

The study was conducted among hypertensive patients, aged 16 to 88, who visited the out-patient clinic of Endocrinology from January 10th, 2011 to September 30th, 2011. 768 of the 774 consecutive hypertensive patients volunteered to participate. The blood pressure, height and weight were measured in all patients. The duration of the hypertensive disease, antihypertensive drug therapy, other concurrent diseases and addictions (e.g. smoking) were determined in all patients. After an 8-hours fast, blood samples were collected for the determination of blood urea nitrogen, serum creatinine, sodium, potassium, plasma aldosterone concentration (PAC) and plasma renin activity (PRA). Care was taken to ensure normal potassium serum levels in all patients before serum Aldosterone/PRA Ratio (ARR) Test and a liberal intake of salt.

Table 1. Comparison of age, sex, serum potassium concentration, blood pressure control between the 6 patients with confirmed primary aldosteronism and the remaining 762 patients with essential hypertension

	Essential hypertension (n=762)	Primary aldosteronism (n=6)	P value
Age (yr) means \pm SD	56,1 \pm 12,1	48,7 \pm 11,0	0,133
Gender (Female - Male)	589/173	2/4	0,028
Duration of hypertension (yr) [median (range)]	6 (1-40)	7,5 (3-22)	0,596
Antihypertensive therapy [median no.of drugs (min-max)]	2 (0-5)	2 (1-3)	0,488
Systolic BP (mm Hg) [median (range)]	140 (90-220)	150 (120-180)	0,265
Diastolic BP ml/Hg [median (range)	80 (50-140)	95 (80-120)	0,087
Serum sodium mEq/L [median (range)]	140 (126-158)	141,5 (139-143)	0,067
Serum potassium mEq/L [median (range)]	4,5 (3,1-6,4)	3,5 (2,9-4,2)	<0,001
PAC ng/dL [median (range)]	13 (1,2-75)	31 (12-34,5)	0,005
PRA ng/mL/h [median (range)]	2,4 (0,15-26,0)	0,3 (0,15-1,4)	<0,001

Table 2. Estimated prevalence of primary aldosteronism in our study population based on different hypothetical PAC cut-off values postsaline infusion test

Diagnostic criteria postsaline infusion test	Number of cases confirmed positive	Estimated Prevalence %
PAC \geq 10 ng/dL	6/774	0,78
PAC \geq 7,5 ng/dL	13/774	1,69
PAC \geq 5 ng/dL	35/774	4,60

Table 3. characteristics of patients with primary aldosteronism

N	Gender	Age	K (mg/dl)	PAC value presaline infusion test (ng/dl)	ARR (PAC/PRA ratio)	PAC value Postsaline infusion test
1	M	36	3,8	12	70,6	19,0
2	M	63	2,9	32	76,6	10,5
3	M	57	3,3	34	226,6	18,0
4	M	51	3,8	30	21,4	10,3
5	F	49	4,2	32	61,5	10,5
6	F	36	3,3	21	130,0	48

Conclusion

The prevalence of PA was found to be 0.8%. More epidemiological studies are needed in the different regions of the country to evaluate the prevalence of PA in Turkey.

Results

ARR was found to be positive (ARR>20) in 134 of the 768 patients. Saline Infusion Test (SIT) was used as the confirmatory test. PAC cut-off used in SIT was 10 ng/dl in this study. The confirmatory test was applied to all 134 patients with positive ARR. The confirmatory test was found to be positive in six patients (0.8%). The prevalence was determined to be 6/768 (0.8%). The prevalence was 4.6 and 1.7 % upon PAC cut-off values of 5 and 7.5 ng/dl were used, respectively. The median values for potassium were found to be 4.5 (3.1-6.4) and 3.5 (2.9-4.2) in essential hypertensive and PA groups, respectively (p<0.001). Three of the six patients (50 %) with PA had hypopotassemia.