Comparison of Heart Rate Variability Values with Diastolic Dysfunction Parameters in Resistant Hypertensives

	E/A (P VALUE)	E/E' (P VALUE)	LA VOLUME INDEX (P VALUE)	LV MASS INDEX (P VALUE)
SDNN	-0,31 (0,1)	0,19 (0,31)	0,38 (0,042)	- 0,41(0,06)
SDANN	-0,67 (0,73)	-0,32 (0,09)	0,22 (0,25)	-0,26 (0,24)
RMSSD	-0,01 (0,94)	-0,15 (0,41)	0,15(0,42)	-0,321 (0,15)
HRV TRIANGULAR INDEX	-0,24(0,20)	0,34 (0,06)	0,31 (0,1)	-0,43(0,049)
MEAN HEART RATE	-0,60(0,76)	-0,003(0,98)	-0,09(0,62)	0,31(0,16)
Pearson correlation analysis was performed				

PP-018

Relation of 24-Hour Urinary Aldosterone Levels with Nondipper Blood Pressure Pattern in Normotensive Individuals

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Purpose: A lot of studies conducted before have shown that there is a corelation between nondipper pattern with the left ventricular hypertrophy and diastolic dysfunction based on circadian rhythm of the blood preasure (BP). The main aim of the study is to investigate the relationship between the amount of the 24-hour urinary aldosterone and the nondipper pattern of the BP.
Method: The study included both an office and ambulatory BP which were monitored in normotensive people (office BP <140/90 mmHg, and the average 24-hour BP <130/80 mmHg) in individuals who did not use any drugs and who were less than 60 years of age. A total of 85 people (54 women, with an average age of 46.2±9.1 years) were included. By continuing with the normal nutrition. All patients were subject to 24 hours measurement of the blood preasure. At the same time, urine was collected and the level of the aldosterone was being measured under the adequate conditions,and, at the end of the study, the level of adolesterone was measured from all the samples (with the diametra aldosteron kit).
Results: The level of the 24- hour aldosteron level turned out to be significantly high in the nondipper group according to the statistics (dipper group 8.6 (5.0, 11.6) mgr/day, nondipper group 9.8 (7.4, 15.5) mgr/day, p=0.026) (Table-1).
Conclusion: The results of our study showed that the amount of the circulating aldostrone (Which is determined by measurment of 24-hour urinary aldosterone) is very high in nondippers. İf we take into consideration that the level of aldosterone is related to the cardiac fibrosis, the high level of aldosterone in patients of nondipper group can be the cause of the heart issues.

Table 1. demographic data

	Dipper (n=42)	Nondipper (n=43)	p
Age	45.6±10.0	46.7±8.1	>0.1
Female, n (%)	24 (57.1)	30 (69.8)	>0.1
BMİ (kg/m2)	28.4±5.0	30.1±3.7	0.08
LVEF (%)	66.9±4.2	65.3±4.4	0.09
LA diameter (mm)	31.9±2.9	33.8±3.0	33.8±3.0
Office SBP (mmHg)	125.6±9.3	126.2±7.1	>0.1
Office DBP (mmHg)	76.1±7.3	73.7±10.8	>0.1
24h SBP (mmHg)	119.7±7.2	120.4±7.3	>0.1
24h DBP (mmHg)	71.8±4.0	73.0±4.7	>0.1
Daytime SBP (mmHg)	127.3±8.5	122.2±8.9	<0.05
Daytime DBP (mmHg)	76.8±4.6	74.1±4.6	<0.05
Night time SBP (mmHg)	107.5±7.8	117.5±7.7	<0.001
Night time DBP (mmHg)	63.3±4.2	69.4±5.0	<0.001
Urinary aldosterone (mgr/day)	8.6 (5.0, 11.6)	9.8 (7.4, 15.5)	0.026

PP-019

Evaluation of Coronary Sinus Strain in Patients with Dipper and Non-Dipper Hypertension

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Objectıve: Hypertension had been reported to affect both the left and the right ventricular functions but its effect on coronary sinus had never been investigated. The aim of this study was to investigate the effect of systemic hypertension on cardiac venous system by evaluating the coronary sinus strain (CSS).
Methods: One-hundred-and-twelve hypertensive patients without diabetes and forty-four healthy subjects (the control group) were evaluated consecutively at the outpatient clinic and enrolled in the study. Coronary sinus strain was evaluated with echocardiography in all subjects prior to blood pressure evaluation. 24-hour ambulatory blood pressure monitoring enabled the study population to be divided into 2 groups: 52 patients with dipper pattern hypertension and 60 with non-dipper hypertension.
Results: There was no significant difference regarding demographic characteristics and body mass index between the groups. Non-dipper pattern patients had a lower coronary sinus strain values compared to dippers but the difference did not reach statistical significance (140.8±54.2 and 164±68.4 p=0.087). Non-dipper pattern patients had significantly lower values of CSS compared to control group subjects (140.8±54.2 and 193.9±48.1 p<0.001). Similarly dipper pattern patients had significantly lower values of CSS values compared to controls (164±68.4 and 193.9±48.1 p=0,036). Comparing the three groups, the CSS values showed a progressive decrease from normal people to dipper and non-dipper patients hypertension. Correlation analysis revealed a positive correlation between the aortic strain and the CSS (r:0,247, p=0,002). There was a weak correlation between left ventricular mass and CSS but no correlation was observed between BMI adjusted LV mass and CSS (r:-164 p:0.041 and r=-109 p:0.174).
Conclusıon: Our study suggest that systemic hypertension may affect cardiac venous system as well as arterial system that had been reported in many papers. The effect on venous system may be more pronounced in non-dipper pattern hypertension.

PP-020

Effect of Diurnal Blood Pressure on Endothelial Functions in Essential Hypertensive Patients

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Hypertension is principal problem increasing nowadays and threatens community health by its complications. In healthy adults, blood pressure levels decrease nocturnally. 'Dipper' are the ones whose systolic blood pressure decrease >10% at night and 'nondipper' are the whose ones systolic blood pressure decrease <10% at night. In the nondippers group cardiovascular morbidity and mortality are increased.

Our aim in this study is to search for the effect of diurnal blood pressure on endothelial functions in essential hypertensive patients.

Our study comprised 30 dippers, 31 nondippers hypertensive patients and 25 healthy volunteers. Ambulatory blood pressure monitoring (ABPM) was hooked-up to hypertensive patients and they were grouped as dippers and nondippers. All individuals were measured by using flow mediated dilatation (FMD) from brachial artery by used to echocardiography.

The groups are similar in term of age, sex, body mass index, using cigarette and biochemical parameters. In nondipper group, the use of beta blocker is higher than dipper group (p=0.023) but, there is no difference between dipper and nondipper hypertensive groups in term of using antihypertensive drugs. FMD in the control group were higher than dipper hypertensive group and in dipper hypertensive group FMD is higher than nondipper hypertensive group (respectively p= 0.003, p=0.023).

In our study we found a relationship among nondipper hypertension and increased endothelial dysfunction. Also, dipper hypertension related to increased endothelial dysfunction. Nondipper hypertension known has more increased cardiovascular event and mortality risk. In this context, patients with hypertension should be followed with ABPM. Therefore nondipper hypertensive patients which have a higher risk can be identified. Thus, efforts for controlling blood pressure in nondipper hypertensive patients provide better risk modification.

PP-021

Androgenic Alopecia is Associated with Increased Arterial Stiffness in Asymptomatic Young Adults

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Background: Several studies have demonstrated the presence of an association between male pattern baldness (androgenic alopecia) and atherosclerotic vascular disease. Hypertension is one of the strongest risk factors of atherosclerosis. Association between androgenic alopecia and hypertension has been established. However, there is no data on arterial stiffness measures of asymptomatic young adults with androgenic alopecia.
Methods: A hundred and seventy four asymptomatic male medical personnel aged between 18-45 years were consecutively enrolled to the study. Data collected included age, history of hypertension, diabetes mellitus, smoking, hypercholesterolemia, familial history of coronary artery disease, systolic and diastolic blood pressures, body-mass index. Subjects were considered to have androgenic alopecia if they have grade 3 vertex or more alopecia according to Hamilton-Norwood scale. Subjects were dichotomized according to presence of androgenic alopecia. Arterial stiffness was assessed by cardio ankle vascular index (CAVI) and defined as abnormal if CAVI is measured >8.
Results: Clinical and laboratory characteristics between subjects with and without androgenic alopecia were summarized in Table 1. Subjects with androgenic alopecia had higher mean CAVI than patients without androgenic alopecia (7.62 ± 0.92 vs. 7.23 ± 0.88, p=0.001). Carotid intima media thickness (CIMT) and ankle brachial index (ABI) were not significantly different in patients with and without androgenic alopecia. Binary logistic regression analysis was performed to find the independent factors associated with abnormal CAVI. The covariates included age, body mass index, smoking status, family history of coronary artery disease, presence of hypertension, hypercholesterolemia, and alopecia. In this model, presence of androgenic alopecia (OR, 6.7; 95% CI, 2.2-20.0, p=0.001), hypertension (OR, 8.4; 95% CI, 1.9-37.4, p=0.006), hypercholesterolemia (OR, 7.0; 95% CI, 1.4-35.0, p=0.02) and age (OR, 1.1; 95% CI, 1.0-1.2, p=0.001) were found to be independently associated with abnormal CAVI (Table 2).
Conclusıon: Androgenic alopecia is independently associated with arterial stiffness in asymptomatic young adults.

Table 1. Comparison of clinical and laboratory characteristics between subjects with and without androgenic alopecia.

	Alopecia (+) n=100	Alopecia (-) n=74	p
CAVI	7.62 ± 0.92	7.23 ± 0.88	0.006
ABI	1.10 ± 0.08	1.12 ± 0.09	NS
CIMT*	0.4 (0.4-0.5)	0.4 (0.4-0.5)	NS
Age*, years	34 (29-39)	32 (29-38)	NS
Diabetes mellitus, n (%)	0 (0 %)	0 (0 %)	NS
Hypertension, n (%)	8 (8 %)	4 (5.4 %)	NS
Hypercholesterolemia, n (%)	2 (2 %)	8 (10.8 %)	NS
Smoking, n (%)	48 (48 %)	30 (40.5 %)	NS
BMI*, (kg/m^2)	27 (25-29)	26 (25-31)	NS
Family history of CAD, n (%)	30 (30 %)	10 (13.5 %)	0.01
Systolic blood pressure, mmHg	135 ± 11	133± 15	NS
Diastolic blood pressure, mmHg	84 ± 10	81 ± 8	NS

ABI, ankle brachial index; BMI, body mass index; CAD, coronary artery disease; CAVI, cardio ankle vascular index; CIMT, carotid intima media thickness, NS, non-significant. Data are expressed as no. (%) or mean ± standard deviation. *Data are presented as median and interquartile ranges.

Table 2. Binary logistic regression analysis showing independent factors associated with abnormal CAVI (CAVI ≥ 8)

Variables	CAVI < 8 n=131	CAVI ≥ 8 n=43	OR (95 % CI)	P
Alopecia, n (%)	66 (50.4 %)	34 (79.1 %)	6.7 (2.2-20.0)	0.001
Hypertension, n (%)	3 (2.3 %)	9 (20.9 %)	8.4 (1.9-37.4)	0.006
Age, years	32.7 ± 5.8	37.7 ± 4.8	1.1 (1.0-1.2)	0.001
Hypercholesterolemia, n (%)	5 (3.8 %)	5 (11.6 %)	7.0 (1.4-35.0)	0.02

The covariates included age, body mass index, smoking status, family history of coronary artery disease, presence of hypertension, hypercholesterolemia, and alopecia.

PP-022

Corelation Between the 24-Hour Urine Aldosterone Levels and Atrial Electromechanical Conduction Time

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Purpose: Number of studies have been performed on the hypertensive patients, related to the level of circulating aldosteron which leads to the cardiac fibrosis, and which is associated to the atrial fibrillation. The aim of our research is to see if there is a relation beetwen atrial electromechanical conduction time (As an indicator of the amount of the circulating aldosteron) and urinary amount of aldosterone observed in 24 hours in normotensive people.
Method: The study included both an office and ambulatory blood pressure (BP) which were monitored in normotensive people (office blood pressure (BP) <140/90mmHg, and the average 24-hour BP <130/80 mmHg) in individuals who did not use any drugs and who were less than 60 years of age. A total of 85 people (54 women, with an average age of 46.2 ± 9.1 years) were included. İndividuals with any chronic disease, people who are smoking or who have used the drugs continiously were excluded from the study. Electromechanical atrial conduction time and both intra-atrial and interatrial conduction delays were measured by using tissue Doppler imaging. A time from the beggining of the P wave, which was noticed by using tissue Doppler, until the time from the beggining of the late diastolic wave (A wave) which is obtained from the septal, the right ventricle and tricuspid annulus was measured. Electromechanical delay between the atrial represents the difference between lateral PA and the tricuspid PA. The differences between septal PA and tricuspid PA, and lateral PA and septal PA are defined as electromechanical delay of the right atrial and electromechanical delay of the left atrial, respectively. By continuing with the normal nutrition, urin was collected in the 24 hours as sample to measure the level of adolesteron, and, under the adequate conditions, at the end of the study, the level of adolesteron was measured from all the samples (with the diametra aldosteron kit).
Results: Demographic data are shown in Table 1. The researches performed on normotensive people showed that there is a correlation between the 24-hour amount of aldosteron and atrial conduction time.
Conclusıon: The results of our research related to the amount of circulating aldosteron (which has been identified by measuring 24-hour urinary aldosterone), showed that it can cause the atrial arrhythmias such as atrial fibrilation.

Table 1. demographic data

	n=85
Age	46.2±9.1
Female, n (%)	54 (63.5)
BMİ (kg/m2)	29.2±4.5
LVEF (%)	66.1±4.4
LA diametre (mm)	32.8±3.1
Office SBP(mmHg)	125.9±8.2
125.9±8.2	74.9±9.3
24h SBP (mmHg)	120.1±7.3
24h DBP (mmHg)	72.4±4.4
Daytime SKB (mmHg)	124.8±9.1
Daytime DKB (mmHg)	75.5±4.8
Night time SKB (mmHg)	112.5±9.2
Night time DKB (mmHg)	66.4±5.5
Urinary aldosterone (mgr/day)	9.1 (6.5, 13.7)

Body mass index (BMİ) Left ventricular ejection fraction (LVEF) Left atrium (LA) systolic blood pressure (SBP) Dystolic blood pressure (DBP)