

**Table 2. Analysis of the correlation between atrial conduction time and 24-hour urinary aldosterone**

	tricuspid PA (ms)	Septal PA (ms)	Lateral PA (ms)	Septal PA-tricuspid PA (right ventricular conduction delay)	Lateral PA-Septal PA (left ventricular conduction delay)	Lateral PA-tricuspid PA (conduction delay between the atria)
Urinary aldosterone (mgr/day)	0.2 (0.069)	0.21 (0.050)	0.31 (0.004)	0.18 (0.099)	0.25 (0.019)	0.32 (0.003)

**PP-023**

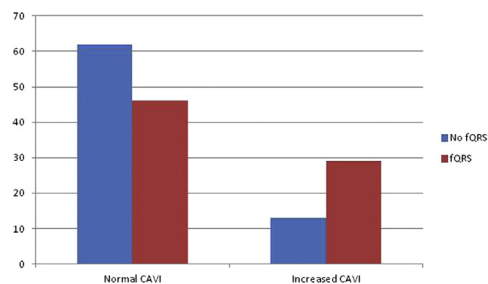
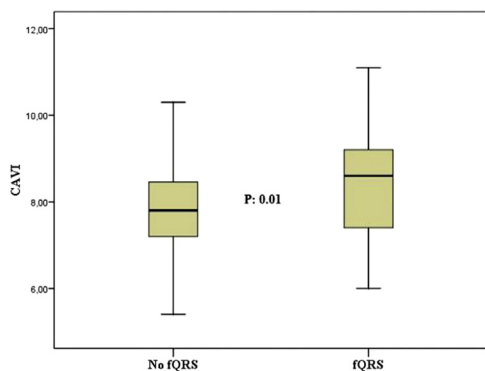
**Fragmented QRS and Cardio Ankle Vascular Index in Asymptomatic Hypertensive Patients**

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**Objective:** Patients with hypertension are predisposed to atherosclerosis of large vessels and are at increased risk of target organ damage and related clinical sequelae. Cardio-ankle vascular index (CAVI) is a novel parameter of arterial stiffness and surrogate marker of subclinical atherosclerosis. The aim of present study was to investigate the relation between fragmented QRS (fQRS) and CAVI in asymptomatic hypertensive subjects.

**Method and Results:** Seventy five asymptomatic hypertensive patients with fQRS and 75 control subjects without fQRS were enrolled. Patients with fQRS had higher CAVI values compared to those without fQRS ( $8.6 \pm 1.4$  versus  $7.9 \pm 1.3$ ,  $p:0.01$ ). In univariate analyse, there was significant association between increased CAVI and age ( $p<0.001$ ) and fQRS ( $p:0.003$ ). Multivariate binary logistic regression analyse demonstrated fQRS: [95% confidence interval (CI): 0.122 – 0.675,  $p:0.004$ ] and age [95% (CI): 1.022 – 1.105,  $p:0.002$ ] as the independent determinants of increased CAVI.

**Conclusion:** Presence of fQRS on ECG may provide important predictive information of arterial stiffness in asymptomatic hypertensive subjects.



**PP-024**

**Mean Platelet Volume and Abnormal Left Ventricle Geometric Patterns in Patients with Untreated Essential Hypertension**

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**Objective:** Abnormal left ventricle (LV) geometric patterns are associated with a greater risk of hypertensive vascular complications. The mean platelet volume (MPV) reflects the platelet activity, and is associated with overall vascular mortality. Although association between MPV and LV hypertrophy in hypertensive patients has been investigated, relation between abnormal LV geometric patterns and MPV was not studied so far. The aim of the study is to investigate the relationship between MPV and abnormal LV geometric patterns in hypertensive patients.

**Methods:** Measurements were obtained from 223 patients with untreated essential hypertension (Mean age =  $52.1 \pm 5.2$  years). Four different geometric patterns (NG; normal geometry, CR; concentric remodelling, EH; eccentric hypertrophy, CH; concentric hypertrophy) were determined according to LV mass index (LVMI) and relative wall thickness (RWth). MPV, high sensitive C-reactive protein (hs-CRP) and other biochemical markers were measured in all patients.

**Results:** The highest MPV values were determined in CH group compared with NG, CR and EH groups ( $p<0.05$ , for all). MPV values were similar among the NG, CR and EH groups ( $p>0.05$ , for all) (Table). MPV was associated with age, glucose, hs-CRP, RWth, LVMI and LV geometry in bivariate analysis ( $p<0.05$ , for all). Age ( $\beta=0.110$ ,  $p=0.033$ ), LVMI ( $\beta=0.471$ ,  $p<0.001$ ) and hsCRP ( $\beta=0.525$ ,  $p<0.001$ ) were independent predictors of high MPV in multiple linear regression analysis.

**Conclusion:** The highest MPV values were observed in CH group. This result may be associated with increased inflammation and LV hypertrophy in this geometric pattern.

**Table. Comparison of baseline, laboratory and echocardiographic characteristics**

Variables	NG group (n=50)	CR group (n=44)	EH group (n=42)	CH group (n=87)	P value
Age, years	52.5±4.2	51.0±4.6	51.4±4.6	52.7±6.1	0.236
MPV, fL	9.4±1.8	9.6±1.7	9.8±1.6	11.2±1.8	<0.001
Platelet count, x10 <sup>9</sup> /L	281.2±48.7	267.5±51.8	264.9±52.3	261.0±52.8	0.269
LVMI, g/m <sup>2</sup>	88.8±10.1	96.7±11.9	128.0±9.6	148.7±24.3	<0.001
HsCRP, mg/dl	0.80±0.31	0.83±0.33	0.88±0.36	0.95±0.34	0.075

MPV; mean platelet volume, HsCRP; high sensitive C-reactive protein, LVMI; left ventricular mass index

**PP-025**

**The Echocardiographic Evaluation of Right Ventricular Function in Patients with Non-Dipper Hypertension**

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**Objective:** Hypertension is a major risk factor for cardiovascular disease. The non-dipper form of hypertension is associated with progressive end organ damage. Diastolic dysfunction may increase the left ventricular end diastolic pressure leading to

pulmonary hypertension and right ventricular strain. The purpose of this study was to evaluate right ventricular function in patients with non-dipper hypertension.

**Methods:** One-hundred-and-thirty-one hypertensive consecutive patients without diabetes and thirty-nine healthy subjects (the control group) were evaluated at the outpatient clinic and enrolled in the study. Right ventricular tissue Doppler, myocardial performance index(MPI) and tricuspid anular plane systolic excursion (TAPSE) were evaluated with echocardiography. 24-hour ambulatory blood pressure monitoring enabled the study population to be divided into 2 groups=42 patients with dipper hypertension and 46 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 TAPSE compared to dippers but the difference did not reach statistical significance ( $2.19\pm0.29$  and  $2.29\pm0.31$   $p=0.17$ ). Non dipper hypertensive patients had significantly lower TAPSE compared to the control group ( $2.19\pm0.29$  and  $2.37\pm0.28$   $p=0.006$ ). Dipper hypertensive patients did not have a significant difference compared with the control group ( $2.29\pm0.31$  and  $2.37\pm0.28$   $p=0.39$ ). The comparison of three groups suggests a progressive decrease in TAPSE values from normals to dipper and non dipper hypertensive patients. Tissue Doppler right ventricular E/A ratio is significantly different in dipper ( $0.77\pm0.30$  vs  $0.91\pm0.39$ ,  $p<0.001$ ) and non-dipper ( $0.77\pm0.30$  vs  $0.91\pm0.39$ ,  $p<0.001$ ) hypertensive patients compared to control group.

**Conclusion:** Hypertension can also affect the right ventricular function as it affects the left ventricular diastolic function. Our results suggest that the effect on right ventricular function is more evident in patients with non-dipper hypertension compared to patients with dipper pattern of blood pressure.

**PP-026**

**Relationship between Hemoglobin Level and Blood Pressure Variability in Patients with Newly Diagnosed Untreated Essential Hypertension**

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**Objective:** Lower hemoglobin at baseline was associated with higher cardiovascular morbidity and mortality in patients with isolated systolic hypertension (HT). 24-hour blood pressure variability (BPV) is linked to higher cardiovascular events, regardless of the blood pressure level. In this study, we aimed to investigate the relationship between hemoglobin level and BPV in patients with newly diagnosed HT.

**Method:** The study included 260 newly diagnosed untreated essential hypertensive patients (mean age:  $55.9\pm10.4$  years, 55% female) with normal range of hemoglobin value. To determine level of BPV, each subject underwent 24-hour ambulatory blood pressure monitoring and 24-h systolic / diastolic BPV were computed for each subject. Complete blood count and biochemistry values were measured by standard methods.

**Results:** In pearson correlation analysis, we found significantly negative association between hemoglobin level and 24-h systolic BPV ( $r=-0.289$ ,  $p=0.002$ ). However, we did not reveal any important correlation between hemoglobin level and 24-h diastolic BPV ( $r=-0.079$ ,  $p=0.461$ ). In stepwise multivariate linear regression analysis decreased hemoglobin level was linked with 24-h systolic BPV level independently other risk factors including age, 24-h and systolic blood pressure level.

**Conclusion:** In patients with newly diagnosed essential HT, even in normal range, low hemoglobin level is independently related with increased 24-h systolic BPV.

**PP-027**

**Determination of Vascular Endothelial Growth Factor (VEGF) and Tie-2 Levels in Patients with Primary Hypertension**

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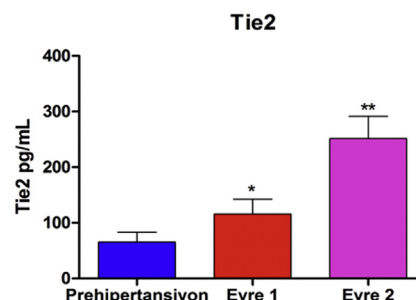
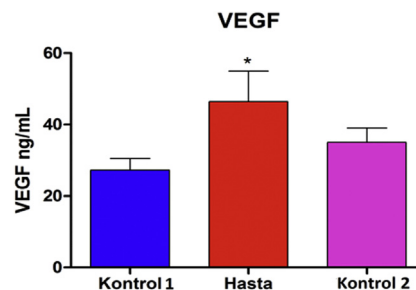
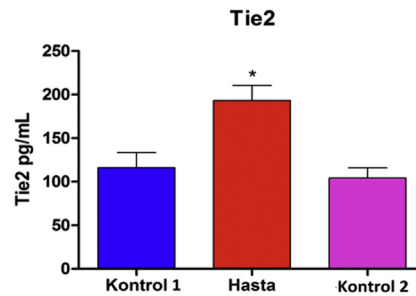
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**Purpose:** It has been revealed that many factors can take a part in pathogenesis of primary hypertension. One of these factors is abnormal angiogenesis. In this study we aimed to investigate the levels of VEGF, an angiogenic factor, and Tie-2, angiopoietin receptor, in individuals with hypertension and some biochemical parameters related to the hypertension.

**Methods:** In the present study 90 individuals have been divided in to 3 groups as 30 patients with primer hypertension (Patient group), 30 healthy individuals with normal blood pressure but with positive family story (Control group 2) and 30 healthy individuals with normal blood pressure and negative family story(Control group 1). All individuals have been evaluated in terms of blood pressure and biochemical parameters. The levels of VEGF and Tie-2 have been evaluated by using ELISA method.

**Result:** In patient group, while Tie-2, VEGF, LDL and triglycerides levels have been found high, the levels of HDL has been found low ( $p<0.05$  Table 1 Figure 1, Figure 2). In correlation analysis, while positive correlation has been found in between hypertension levels and Tie-2 receptor levels ( $p<0,05$  Figure 3), there was no significant correlation in between hypertension levels and VEGF levels ( $p>0,05$ ).

**Conclusion:** As a result of this study, these results indicate that VEGF and Tie-2 receptor may be related to the primer hypertension.



**Table 1**

	Patient	Control 1	Control 2	p
HDL (mg/dl)	37,80±8,93	43,03±7,58	33,93±4,38	0,001 *
LDL (mg/dl)	93,37±27,30	69,80±14,72	71,30±10,94	0,001 *
TG (mg/dl)	139,20±80,30	83,06±16,32	79,26±18,96	0,001 *

HDL,high-density lipoprotein;LDL,Low-density lipoprotein;TG,triglycerides. \* The difference between with the control group 1 and patients.The difference between with control group 2 and patients is insignificant (( $p>0.05$ ))