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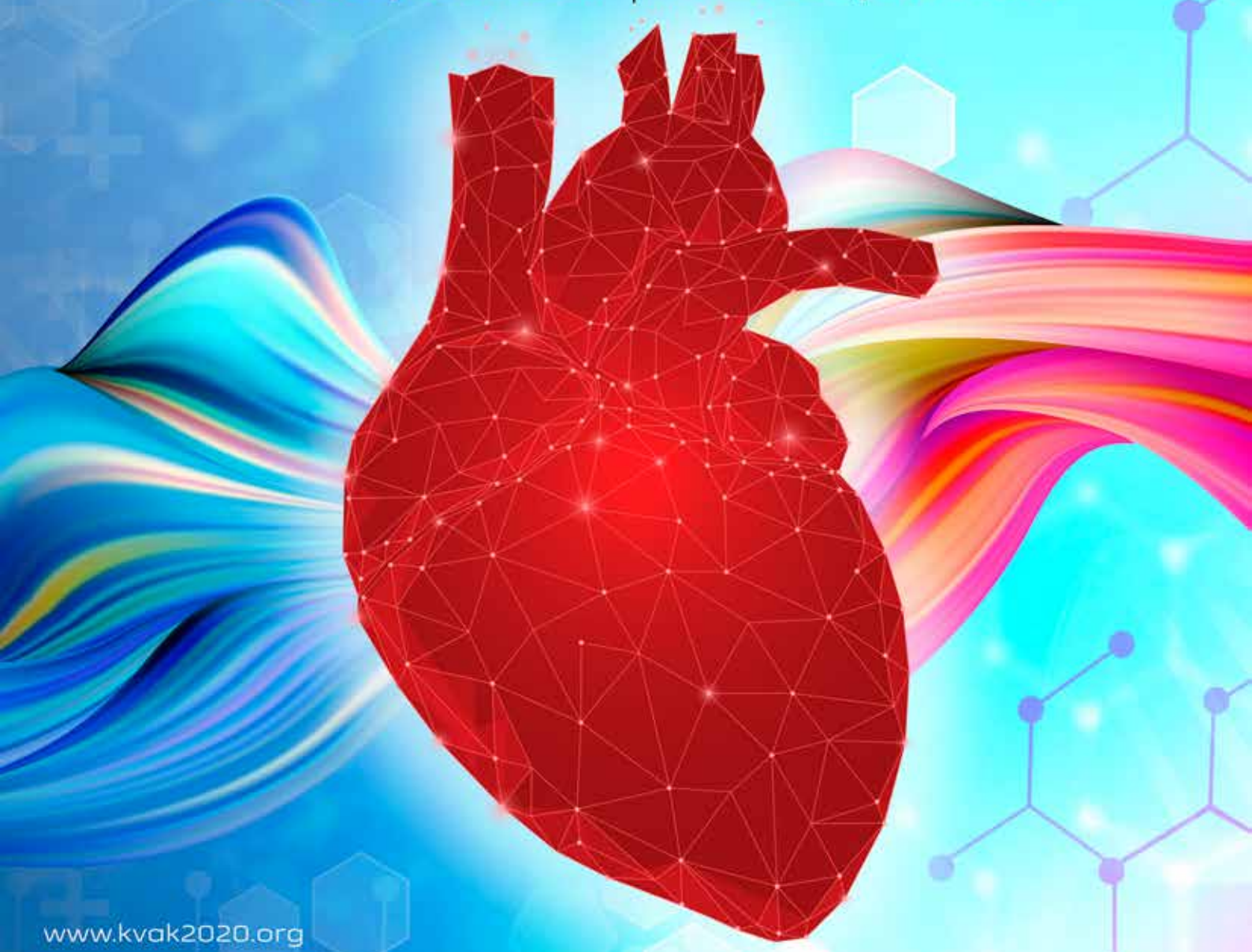

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ORAL PRESENTATIONS

OA-2 IS ST/HR INDEX ASSOCIATED WITH SEVERITY AND COMPLEXITY OF CORONARY ARTER DISEASE?

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Aim: Heart rate-corrected analysis of ST segment variables (ST/HR) has shown improved prediction of ischemic heart disease compared to ST depression alone. In this study, we evaluated whether the ST/HR index is associated with Gensini and SYNTAX scores.

Method: A total of 220 patients referred to coronary angiography after exercise electrocardiographic test were recruited to this study. The study population was divided into two groups according to the presence of coronary artery disease. The Gensini and the SYNTAX scores were calculated by two expert cardiologists who were blinded to the patient's clinical and laboratory data.

Results: CAD patients tend to be older and male with a higher prevalence of hypertension and diabetes mellitus compared to non-CAD patients. Additionally, while chronotropic response index (CRI) was lower in the CAD patients, ST/HR index was higher in those than non CAD patients (Table 1). Both low CRI and high ST/HR index were found to be independent predictors of CAD after adjusting for age, gender, diabetes and hypertension (Table 2). When the relation between ST/HR index, Gensini score and SYNTAX score were evaluated, a statistically significant positive linear correlations were shown between ST/HR index and the both Gensini and SYNTAX scores (r:0,349, p<0.001; r:0.295, p:0.002, respectively, Figure 1 and Figure 2).

Conclusion: According to our finding, ST/HR index might be associated with both severity and complexity of coronary artery disease

Keywords: ST/HR index, Gensini score, SYNTAX score, coronary artery disease

Figure 1: ST/HR index and gensini score correlation curve

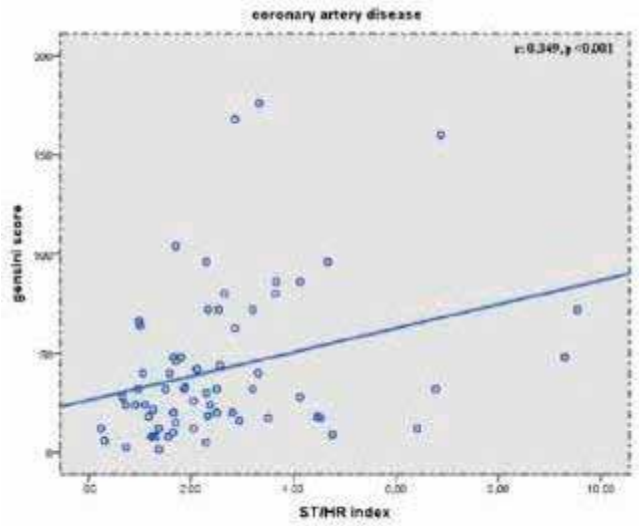

Figure 1: ST/HR index and gensini score correlation curve

Figure 2: ST/HR index and SYNTAX score correlation curve

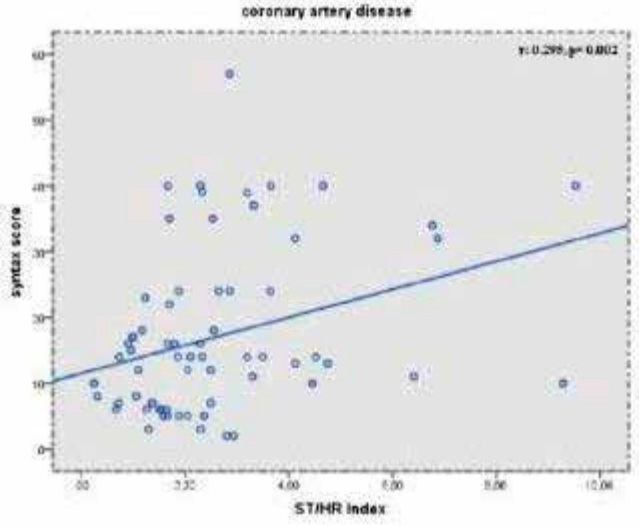

Figure 2: ST/HR index and SYNTAX score correlation curve

Table.1 Demographic and baseline clinical characteristics of the non-cardiac disease (non-CAD) group and cardiac disease (CAD) group.
Table.2 Regression analysis results of coronary artery disease (CAD) groups.

Table.1

Variables	Non-CAD group (n:109)	CAD group (n:111)	p- value
Age (years)	55.1 ± 9.9	58.2 ± 8.4	0.012
Gender (male %)	58 (53.2)	94 (84.7)	<0.001
Hypertansion	28 (25.7)	45 (40.5)	0.019
Diabetes mellitus (%)	26 (23,9)	42 (37.8)	0.025
Cigarette (%)	33 (30.3)	37 (33.3)	0.626
Basal heart rate (bpm)	80.1 ± 14.9	77.4 ± 14.8	0.085
Peak heart rate (bpm)	156.4 ± 18.2	144.1 ± 21.4	<0.001
Treadmill exercise time (min.)	8.17 [6.20-9.23]	8.46 [6.45-9.45]	0.272
Metabolic equivalents	10.2 [8.05-12.1]	10.2 [923-13.3]	0.355
Chronotropic response index	0.942 [0.803-1.129]	0.817 [0.639-0.948]	<0.001
ST/HR index	1.530 [1.135-2.56]	2.11 [1.26-3.20]	0.015

Table.2

	Univariate Analysis		Multivariate Analysis	
Variable	OR (95% CI)	P value	OR (95% CI)	P value
Age (years)	1.038 (1.008-1.070)	0.014	1.064 (1.026-1.103)	0.001
Gender (male %)	4.862 (2,566-9.212)	<0,001	7.277 (3.458-15.316)	<0.001
Hypertansion	1.972 (1.112-3.498)	0.020	1.848 (0.879-3.887)	0.105
Diabetes mellitus (%)	1.943 (1.084-3.485)	0.026	1.912 (0.883-4.137)	0.100
Chronotropic response index	2.400 (1.352-4.261)	0.003	2.520 (1.281-4.955)	0.007
ST/HR index	2.528(1.467-4.358)	0.001	4.094 (2.084-7.869)	<0.001

OA-3 ASSOCIATION BETWEEN QRS SCORE AND NO-REFLOW IN PATIENTS WITH ST-ELEVATION MYOCARDIAL INFARCTION UNDERGOING PRIMARY CORONARY PERCUTANEOUS INTERVENTION

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Objective: No- reflow phenomenon incidence may range from %1 to %25 in primary percutaneous coronary intervention (PCI) procedures. QRS score have been show to correlate with pathologic infarct size. The Selvester QRS score is associated with myocardial scar and poor prognosis. The aim of this study was to investigate the relationship between QRS score and no-reflow phenomenon in patients undergoing primary PCI.

Method: This study included 225 patients with ST elevation myocardial infarction (STEMI) undergoing primary PCI. Demographic characteristics, additional data, laboratory data, electrocardiography and echocardiography findings were recorded. The Selvester score and Synergy between PCI with Taxus and Cardiac Surgery (SYNTAX) score was calculated. The patients were divided into two groups according to no-reflow development.

Results: There were 49 (21,7%) patients in the no-reflow group (mean age: 59,57±13,87; 64,3% male), and 176 patients in the non no-reflow group (mean age: 53,2±11,04; 85,7% male). Hypertension and smoking patients were significantly higher in the no-reflow group (p=0,003; p< 0,001). Patients with diabetes mellitus and coronary artery disease similar between the groups. Glucose (196,93±90,36; 158,31±68,48 p=0,001), was higher in no-reflow group (Table). QRS score and SYNTAX score were higher in no-reflow group (p=0,006; p=0,008).

Conclusion: In this study, we investigate the relationship between QRS score and no-reflow in patients with STEMI undergo primary PCI.

Keywords: Primary percutaneous coronary intervention, QRS score, No-reflow phenomenon

Table. **Baseline Characteristics, Laboratory Measurements, QRS score, SYNTAX score of the Study Population**

	No-reflow + (n:49)	No-reflow - (n:176)	p value
Male, gender (%)	34(64,3)	151(85,7)	0,006
Age (years)	59,57±13,87	53,20±11,04	0,001
Diabetes Mellitus n (%)	13(26,3)	33(18,7)	0,240
Hypertension n (%)	26(53)	53(30,1)	0,003
Coronary Artery Disease n (%)	2(4)	10(5,6)	0,654
Current smoking status n (%)	24(48,9)	134(76,1)	<0,001
Hemoglobin (g/dL)	14,34±1,58	14,60±1,55	0,296
White blood cell (103/µL)	13,91±4,22	12,82±4,12	0,104
Platelet (103/µL)	255,04±94,64	249,89±71,93	0,681
Glucose (mg/dL)	196,93±90,36	158,31±68,48	0,001
Urea (mg/dL)	31,63±9,94	30,12±8,93	0,307
Creatinine (mg/dL)	0,85±0,23	0,85±0,23	0,988
Low Density cholesterol (mg/dL)	134,83±35,80	131,61±34,61	0,568
Total cholesterol (mg/dL)	204,95±41,22	199,98±42,39	0,466
Troponin T (pg/ml)	1421,52±2283,56	1010,47±2164,03	0,247
Ejection fraction (%)	43,11±6,90	44,89±6,49	0,095
QRS score	7,51±3,35	6,10±3,09	0,006
SYNTAX score	19,47±6,41	16,98±5,63	0,008

OA-4 THE USE OF INTANTANEOUS WAVE FREE RATIO IN THE EVALUATION OF NON CULPRIT LESIONS IN PATIENTS WITH ACUTE CORONARY SYNDROME

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Background: Non-invasive methods such as myocardial stress test and myocardial perfusion scintigraphy have traditionally been used to determine the clinical significance of coronary lesions and to prove ischemia. Nevertheless, especially in patients with acute coronary syndrome (ACS) use of these tests is limited in the functional evaluation of noncritical coronary lesions detected in coronary arteries other than the target lesion. We aim to compare the correlation of non-culprit lesions with fractional flow reserve (FFR) and instantaneous wave free ratio (IFR) in patients with acute coronary syndrome (ACS)

Methods: Among patients admitted to the our cardiology clinic, 48 patients (male: 43, ACS group :16 stable angina pectoris, SAP group:32) who underwent coronary angiography had a degree of stenosis of 50-70% (Non culprit lesion in ACS) with acute coronary syndrome and SAP were included in the study. Coronary angiography was performed within 48-72 hours in patients with ACS. FFR and IFR values of patients were measured. The cut-off value for FFR was 0.80 and 0.89 for IFR adenosine was administered intravenously.

Results: The patients included in the study were divided into two groups as acute coronary syndrome and stable angina pectoris. It was statistically significant between the IFR and FFR results measured in patients with acute coronary syndrome (kappa: 0.429 p: 0.037).IFR and FAR measured in patients with stable angina pectoris was not found statistically significant among the results. (kappa: 0,238 p: 0,178)

Conclusions: IFR, which has recently been used in the functional evaluation of coronary lesions, was positively correlated with FFR in the evaluation of non-culprit lesion in patients with acute coronary syndrome

Keywords: instantaneous wave free ratio, fractional flow reserve, acute coronary syndrome

The demographic characteristics of study population and the correlation between of fractional flow reserve and instantaneous wave-free ratio flow

Table 1:The demographic characteristics of study population

	Acute Coronary Syndrome (n:16)	Stable Angina Pectoris (n:32)	P VALUE
Age	55,84 ± 9.6	58,9 ±10.4	0,330
Sex (Male)	14(%87.5)	29(%90.6)	0,546
Diabetes Mellitus	7(%43.7)	5(%15.6)	0,041
Hypertension	9(%56.3)	12(%37.5)	0,177
Hyperlipidemia	3(%18.8)	4(%12.5)	0,429
Current Smoking Status	9(%56.3)	9(%28.1)	0,058
Family History	9(%56.3)	5(%15.6)	0,050

Table 2:The correlation between of fractional flow reserve and instantaneous wave-free ratio flow

All Patients	FFR Critical	IFR Critical	IFR Non-Critical	
		13(n) %54,2	11(n) %45,8	Sensitivity:%62,1 Specificity:%68.4
	FFR Non-Critical	6(n)%25	18(n) %75	PPV:%54.2 NPV:%75 P Value:0,039
Acute Coronary Syndrome	FFR Critical	IFR Critical	IFR Non-Critical	
		5(n) %50	5(n) %50	Sensitivity:%100 Specificity:%54.5
	FFR Non-Critical	0(n) %0	6(n) %100	PPV:%50 NPV:%100 P Value:0,037
Stable Angina Pectoris	FFR Critical	IFR Critical	IFR Non-Critical	
		8(n) %57,1	6(n) %42,9	Sensitivity:%57.1 Specificity:%66.7
	FFR Non-Critical	6(n) %33,3	12(n) %66,7	PPV:%57.1 NPV:%66.7 P Value:0,138

FFR: Fractional flow reserve, IFR: Instantaneous wave free ratio, PPV: Positive predictive value, NPV: Negative predictive value

OA-5 FATAL COMPLICATION AFTER THE MYOCARDIAL INFARCTION: VENTRICULAR RUPTURE AND VENTRICULAR PSEUDOANEURYSM; SURGERY OR FOLLOW-UP?

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Introduction: A ventricular pseudoaneurysm develops after an acute myocardial infarction (MI) that is complicated by a ventricular free wall rupture that is contained by localized pericardial adhesions. The risk of rupture in untreated pseudoaneurysms is 30-45% and the mortality rate is 50%. Alt-hough there is no clear evidence of treatment in the literature, the main suggestion is to perform surgical treatment without delay. However, the age of the patients, additional comorbidities and the difficulty of the operation considerably increase the mortality rate of the surgical procedure.

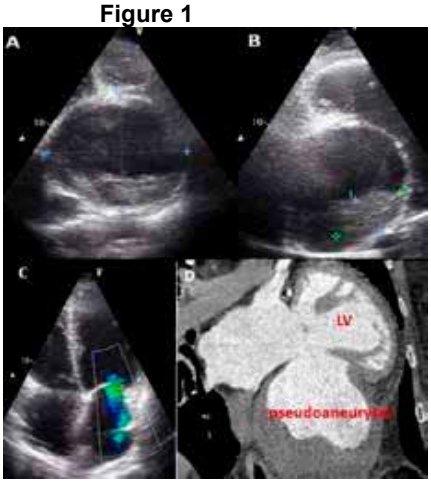
Case report 1: A 72-year-old man underwent coronary angiography with the diagnosis of inferior STEMI in February 2018, but the procedure was terminated with TIMI 2 flow. After 1 week the patient admitted with shortness of breath, TTE revealed pericardial effusion severe mitral regurgitation and CT angiography was performed with the prediagnosis of cardiac rupture. CT angiography shows ventricular aneurysm formation in the LV poste- roinferior region and self-limited rupture. We followed up the patient 2 weeks in hospital and then the clinical status of the patient was discussed in the cardiovascular surgery and cardiology council and the patient was advised to undergo cardiac transplantation, however, the patient and their relatives did not accept cardiac transplantation. After this point, the patient was discharged and followed up as an outpatient under medical treatment. In the TTE performed monthly, pseudoaneurysm sac and thrombus were observed enlarged. The size of the aneurysm was 105x95 mm and the thrombus size was 60x31 mm in TTE and the patient had severe eccentric mitral regurgitation The patient was reevaluated with CT angiography and it was seen that the aneurysm sac grew (120x100 x 95mm) and thrombus was present (Figure 1). As a result, we successfully followed up as an outpatient with NYHA 2 symptoms but, in December 2019, the patient died due to pulmonary edema and cardiogenic shock.

Case Report 2: A 59-year-old female patient admitted to our outpatient clinic for decompensated heart failure and NYHA 3-4 symptoms. In 2013, an unsuccessful PCI was performed to RCA with inferior STEMI in the different medical centers. The TTE revealed very low ejection fraction, restrictive type diastolic dysfunction and the pseudoaneurysm sac. As a result of inferoposterior region pseudoaneurysm, mitral valve posteromedial papillary muscle structure was distorted and it caused eccentric severe mitral regurgitation. CT angiography is performed and ventricular pseudoaneurysm for-mation of 85x60x90mm size is detected (Figure 2).. The patient's symptoms of hypervolemia and heart failure were controlled by medical treatment and discharged and follow-up under close supervision.

Conclusion: In asymptomatic patients and mildly symptomatic patients under medical treatment who have high surgical risks because of associated medical problems, conservative management may be considered.

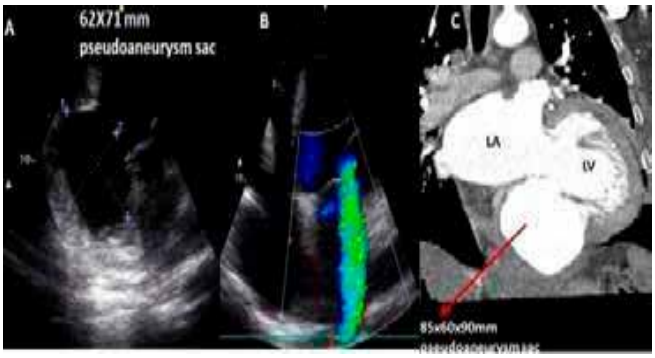
Keywords: Ventricular Pseudoaneurysm, Surgery, Follow-up

Figure 1



Echocardiographic and Cardiac BT image of pseudoaneurysm of case 1.

Figure 2



Echocardiographic and Cardiac BT image of pseudoaneurysm of case 2.

OA-6 MONOCYTE TO HIGH DENSITY LIPOPROTEIN RATIO PREDICTS CORONARY ARTERY DISEASE SEVERITY

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Objective: Monocytes, the source of various cytokines and molecules, interact with platelets and endothelial cells, leading to an aggravation of inflammatory and thrombotic pathways. High-density lipoprotein cholesterol (HDL-C) inhibits the migration of macrophages and oxidation of low-density lipoprotein cholesterol molecules. With these actions, HDL-C neutralizes these pro-inflammatory and pro-oxidant effects of monocytes. Therefore, features such as monocyte to HDL-C ratio (MHR) may indicate a patient's inflammatory state.

Inflammation, oxidative stress and endothelial dysfunction play a role in the pathogenesis of coronary artery disease. Recent studies indicate the importance of inflammation biomarkers in determining the severity of coronary artery disease. With this study, we aim to evaluate the relationship between MHR and coronary artery disease severity.

Method: A total of 77 patients were included for the study. Patients with acute coronary syndromes, with angiography indication due to angina symptoms, positive treadmill stress tests were included for the study. Patients under 18 years of age were excluded from the study.

Results: Mean age of the study was 60.9±11.1 and 64.9% (n=50) was male. 61% (n=47) of the study population had a history of hypertension, 36.4% (n=28) had diabetes mellitus and 3.9% (n=3) had heart failure history. 51.9% (n=40) of patients were elective coronary angiographies, 16.9% (n=13) presented with anterior myocardial infarction, 20.8% (n=16) with inferior myocardial infarction and 10.4% (n=8) of the patients presented with non-ST elevation myocardial infarction.

MHR was 0.011±0.007 for elective interventions (n=34, 44.2%) and 0.017±0.010 for acute coronary syndrome patients (n=43, 55.8%) and the dif- ference was statistically significant (p=0.003). MHR was positively correlated with number of diseased arteries (p=0.019, r=0.238), implanted stent number (p=0.000, r=474), applied percutaneous balloon angioplasty number (p=0.000, r=0.488).A statistically significant difference was found bet- ween patients with severe lesions and were treated with a by-pass or percutaneous coronary intervention (n=43, 55.8%) and those who were decided to receive medical treatment (n=34, 44.2%, p=0.001).

Conclusion: MHR can be used as a biomarker to detect the severity of coronary artery disease and has relationship with number of vessels with lesions, number of stent and percutaneous balloon angioplasty needed for culprit lesions.

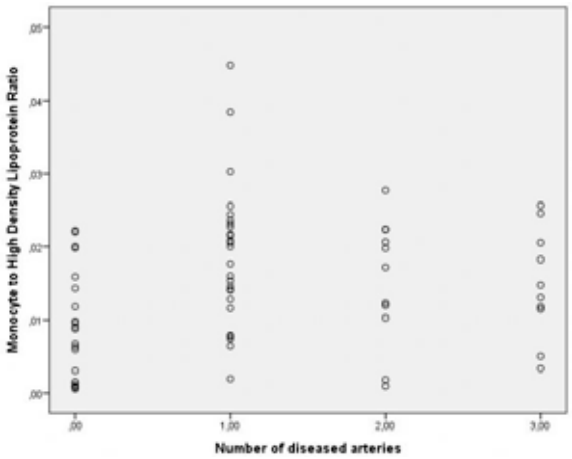
Keywords: monocyte, high density lipoprotein, myocardial infarction, coronary artery disease

Table 1

Age (years)	60.9 ± 11.1
Male (%	50 (64.9%)
Hypertension (%)	28 (36.4%)
Diabetes Mellitus (%)	3 (3.9%)
Heart Failure (%)	40 (51.9%)
History of Coronary Artery Disease (%)	21 (27.3%)
Smoking (%)	50 (64.9%)
Blood Examination	
FBG (mg/dl)	146.7 ± 61.7
Creatinine (mg/dl	0.8 ± 0.3
Total cholesterol (mg/dl)	196.7 ± 43.9
HDL-C (mg/dl)	43.6 ± 9.9
LDL-C (mg/dl)	123.6 ± 39.
TG (mg/dl)	153.1 ± 112.4
Hb(g/dl)	14.3 ± 1.9
WBC counts(*1000/uL)	8.9 ± 3.9
Neutrophil counts (*1000/uL)	5.4 ± 3.7
Lymphocyte counts(*1000/uL)	2.6 ± 1.1
Monocyte counts(*1000/uL)	0.6 ± 0.3
Platelet counts(*1000/uL)	257.3 ± 82.4

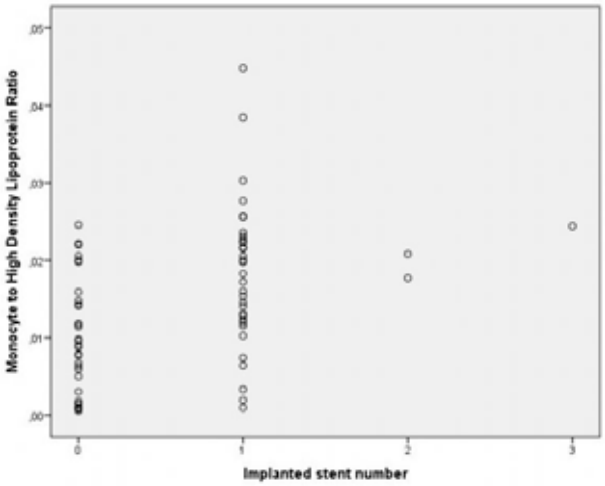
Baseline characteristics of the study population

Figure 1



Correlation of number of diseased arteries and monocyte to high density lipoprotein ratio

Figure 2



Correlation of number of stents and monocyte to high density lipoprotein ratio

OA-7 SERUM ENDOCAN LEVEL IS ASSOCIATED WITH THE PATHOPHYSIOLOGY OF AORTIC VALVE SCLEROSIS

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Background: Aortic valve sclerosis (AVS) is defined as calcified and thickened aortic leaflets without restriction of leaflet motion. Inflammatory pro- cess, oxidation, endothelial damage, extracellular matrix degradation, and calcification are involved in the pathogenesis of AVS. Endocan is synthesized and secreted by activated vascular endothelium; and it has been shown to be related to endothelial dysfunction and inflammation. We aimed to evaluate the relationship between Endocan levels and AVS.

Methods: The study design was cross-sectional. 45 patients with AVS and 50 age- and gender-matched controls were enrolled into the study. The clinical characteristics of the patients were obtained and Endocan levels were calculated.

Results: Endocan level was significantly higher in the AVS (+) group compared to control group ($p < 0.001$). In multivariate analysis; Endocan ($p = 0.006$, OR = 2.27, 95% C.I. = 1.15–4.51) was found to be independent predictor of AVS. To find out the ideal Endocan cut-off value for predicting the AVS, ROC analysis was performed. An Endocan value of > 2.35 ng/mL has 82.4% sensitivity, 68.5% specificity for the prediction of the NRP [AUC 0.712, ($p < 0.001$)].

Conclusion: This is the first study evaluating the association between Endocan level and AVS. We found that Endocan level is an independent predictor of the AVS. According to these findings, we can say that Endocan, which is associated with other cardiovascular diseases, is also involved in the pathophysiology of AVS.

Keywords: Aortic valve sclerosis, Endocan, endothelial dysfunction

ROC curve of Endocan

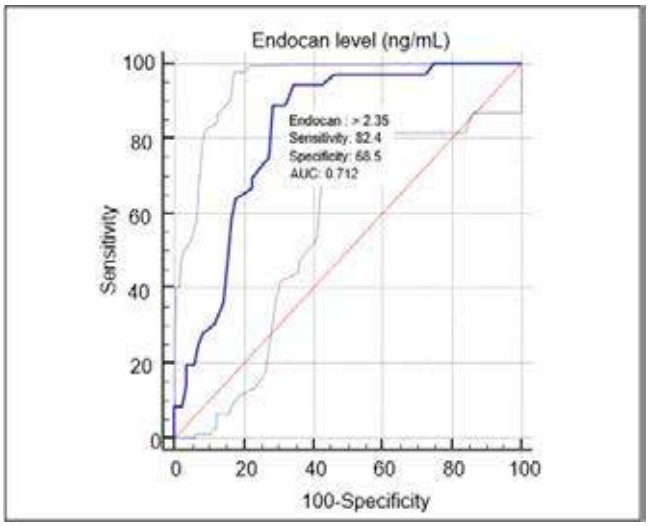

Table 1. The baseline clinical characteristics and laboratory results Table 2. Two-dimensional echocardiographic results Table 3. The independent predictors of AVS in multivariate regression analysis

Table.1

	Control group (n = 50)	AVS (+) group (n = 45)	P Value
Age, years	52.5 ± 12.7	53.4 ± 12.3	0.462
Male gender, n (%)	28 (56)	25 (55.5)	0.284
BMI (kg/m2)	27.2 ± 4.3	30.3 ± 4.6	0.001
Hypertension, n (%)	26 (52)	27 (60)	0.018
Diabetes Mellitus, n (%)	12 (24)	11 (24.4)	0.263
Hyperlipidemia, n (%)	13 (26)	17 (37.7)	0.025
Smoking, n (%)	10 (20)	14 (31.1)	0.032
Systolic BP, mmHg	117.2 ± 16.8	119.5 ± 20.4	0.344
Diastolic BP, mmHg	72.4 ± 9.1	71.7 ± 9.9	0.206
TC (mg/dL)	165.2 ± 33.4	171.2 ± 35.7	0.104
HDL-C (mg/dL)	35.8 ± 8.7	34.9 ± 8.3	0.617

LDL-C (mg/dL)	114.7 ± 33.6	130 ± 37.5	0.003
TG (mg/dL)	131.5 ± 42.7	158.4 ± 40.6	0.015
Hemoglobin (g/dL)	14.5 ± 2.4	14.7 ± 2.2	0.496
Platelet (x1000) (K/uL)	259 (111 / 372)	263 (108 / 414)	0.135
Endocan (ng/mL)	1.98 ± 0.24	2.68 ± 0.36	<0.001

Table.2

	Control group	AVS (+) group	P value
	(n = 50)	(n = 45)	
Peak transaortic velocity (m/s)	1.4 ± 0.3	1.8 ± 0.6	0.012
Ascending aorta diameter (mm)	34.1 ± 4.1	35.3 ± 4.3	0.336
Left atrium diameter (mm)	35.2 ± 3.9	36.4 ± 3.8	0.478
LVSWT (mm)	9.6 ± 1.2	9.7 ± 1.4	0.552
PWT (mm)	8.5 ± 1.4	8.7 ± 1.5	0.154
LVEDD (mm)	45.3 ± 4.7	45.2 ± 4.8	0.816
LVESD (mm	30.8 ± 4.9	31.4 ± 4.5	0.283
E/A	1.18 ± 0.5	1.21 ± 0.6	0.419
Lateral e' (cm/s)	11.5 ± 3.4	11.8 ± 3.1	0.677
Septal e' (cm/s)	8.3 ± 1.1	8.2 ± 1.2	0.314
TAPSE (mm)	20.7 ± 3.5	21.4 ± 3.2	0.195

Table.3

Variable	P Value	Odss Ratio (%95 C.I.)
Endocan	0.006	2.27 (1.15 – 4.51)
BMI	0.022	1.28 (1.12 – 1.78)
LDL-C	0.026	1.19 (1.05 – 1.64)
TG	0.059	1.06 (0.92 – 1.43)
Hypertension	0.086	1.02 (0.85 – 1.34)
Hyperlipidemia	0.124	0.97 (0.83 – 1.26)
Peak transaortic velocity	0.346	0.89 (0.72 – 1.15)
Smoking	0.402	0.82 (0.70 – 1.08)

OA-8 ENDOCAN IS ASSOCIATED WITH THE PATHOPHYSIOLOGY OF ILIAC CHRONIC TOTAL OCCLUSION

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Objective: Peripheral arterial disease (PAD) is associated with increased mortality and morbidity. Iliac chronic total occlusion (I-CTO) is a common finding in 25-30% of the patients with PAD. Endocan is secreted by activated vascular endothelium, and it has been shown to be related to endothelial dysfunction, inflammation, and atherosclerosis. In the present study, we investigated the association between serum Endocan levels and I-CTO.

Methods: The design of the current study is cross-sectional. The study population consisted of 72 patients (32 patients in I-CTO (+) group and 40 patients in I-CTO (-) group) who underwent lower limb diagnostic angiography and diagnosed PAD. The baseline clinical characteristics of the patients were obtained, and serum Endocan levels were calculated.

Results: Serum Endocan, total cholesterol (TC), triglyceride (TG), and platelet distribution width (PDW) levels were significantly higher in the I-CTO (+) group compared to I-CTO (-) group (p<0.001, p=0.004, p=0.017, and p=0.022, respectively). The multivariate logistic regression models revealed that Endocan [p<0.001, Odds ratio (OR) = 2.79, 95% Confidence interval (C.I.) = 1.24-6.88] and TC [p=0.03, OR = 1.35, 95% C.I. = 1.18-2.27] were independent predictors of I-CTO. ROC analysis was performed to find out the ideal Endocan cut-off value for predicting the I-CTO. An Endocan value of >2.92 ng/mL has 80.6% sensitivity, 63.8% specificity for the prediction of I-CTO (AUC 0.696, p=0.001).

Conclusion: According to these findings, Endocan has an active role in the pathogenesis of I-CTO. In the current study it was shown that increased Endocan and TC levels were independently associated with I-CTO. More comprehensive prospective studies investigating the pathophysiology of I-CTO are needed.

Keywords: Endocan, peripheral arterial disease, endothelial dysfunction, iliac chronic total occlusion

Figure 1. ROC curve of serum Endocan level

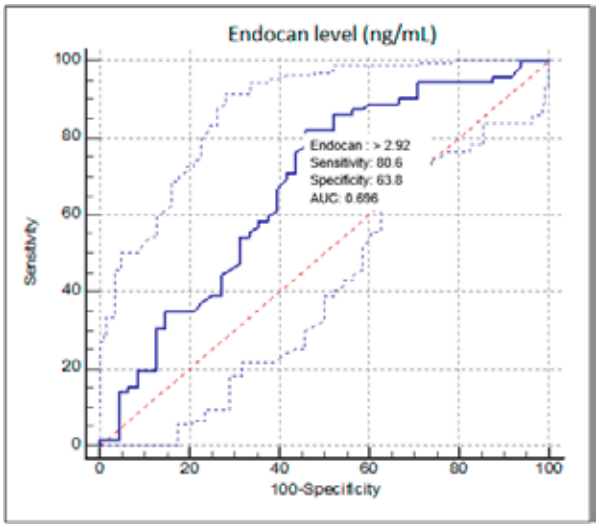

Table 1. The baseline clinical characteristics and laboratory results of the patients

	I-CTO (-) group (n = 40)	I-CTO (+) group (n = 32)	P Value
Age, years	59.2 ± 11.9	60.6 ± 11.8	0.512
Male gender, n (%)	29 (72.5)	24 (75)	0.146
Smoking, n (%)	25 (62.5)	22 (68.7)	0.019
BMI (kg/m2)	29.2 ± 4.7	28.8 ± 4.9	0.373
LVEF (%)	54.6 ± 7.4	52.1 ± 7.5	0.058
Hypertension, n (%)	26 (65)	21 (65.6)	0.285
Diabetes Mellitus, n (%)	19 (47.5)	16 (50)	0.117
Hyperlipidemia, n (%)	16 (40)	18 (56.2)	0.011
Endocan (ng/mL)	2.32 ± 0.62	3.16 ± 0.68	<0.001
Hemoglobin (g/dL)	13.6 ± 2.7	13.5 ± 2.4	0.645
Platelet (x1000) (K/uL)	261 (114 / 383)	296 (125 / 438)	0.096
MPV (fL)	10.4 ± 1.2	11.2 ± 1.3	0.104
PDW (K/uL)	11.3 ± 4.52	13.8 ± 5.14	0.022
TC (mg/dL)	154.4 ± 32.7	183.5 ± 36.2	0.004
TG (mg/dL)	141.2 ± 40.3	166.7 ± 45.8	0.017
HDL-C (mg/dL)	34.2 ± 7.5	32.6 ± 7.9	0.273
LDL-C (mg/dL)	130.6 ± 38.9	139.5 ± 40.4	0.081

OA-9 THE RELATIONSHIP BETWEEN FIBRINOGEN/ALBUMIN RATIO AND SEVERITY OF CORONARY ARTERY DISEASE IN PATIENTS WITH NSTEMI

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Background: The relationship between acute coronary syndromes and fibrinogen, a positive acute phase reactant, and albumin, a negative acute phase reactant, has been demonstrated. In literature, there is a study investigating the correlation between fibrinogen/albumin ratio and Syntax score in ST segment elevation myocardial infarction (STEMI), which a severe inflammatory state. In this study, we aimed to investigate the value of FAR in predicting Syntax Score in Non ST segment elevation myocardial infarction (NSTEMI), which is a less inflammatory state compared to STEMI.

Method: 230 patients with NSTEMI were retrospectively analyzed. Complete blood counts, serum fibrinogen, and serum albumin were obtained at admission and fibrinogen-albumin ratio was calculated. The extent and severity of CAD were evaluated using the SS. The patients were divided into low (SS<22) and intermediate-high (SS>=22) risk groups. The cut-off points for sensitivity and specificity of FAR in predicting SS were estimated by performing a receiver operator characteristic (ROC) curve analysis. Then, we evaluated the relationship of FAR with the CAD extent and severity.

Results: When angiographic images of the patients including in the study were examined, SS higher than 22 in 82 patients; lower than 22 in 148 pati- ents were determined. When the risk factors of coronary artery disease were compared, it was found that smoking rate (p = 0.005) and hypertension (p = 0.01) were significantly higher in the group with SS> 22. It was found that the heart rate was higher in the group with SS> 22 (85.5 ± 12.1 vs 77.9
± 14.1; p: 0.005), whereas the ejection fraction was lower (44 ± 8.8 vs 50). ± 7.8; p = 0.001). FAR was found significantly higher in the group with high SS (95 ± 14 vs 78 ± 10; p: 0.001). We detected that FAR (OR: 1,112, 95% CI: 1,060-1,168, p = 0.001) is a significant parameter in predicting high SS, as a result of univariate and multivariate logistic regression analysis of factors in NSTEMI. According to the result of the receiver-operating characteristic (ROC) analysis, we concluded that FAR was> 80.6 in NSTEMI patients' predictedSS > 22 with 82% sensitivity and 72% specificity.

Conclusion: The FAR a newly introduced inflammation-based risk index, was found to be a useful diagnostic parameter for predict severity of coronary artery disease in patients with NSTEMI.

Keywords: Fibrinogen/Albumin Ratio, NSTEMI, Syntax Score, inflammation

Receiver–operating characteristic (ROC) curve analysis and cut-off value of FAR in patients with NSTEMI, who have high SS>22.

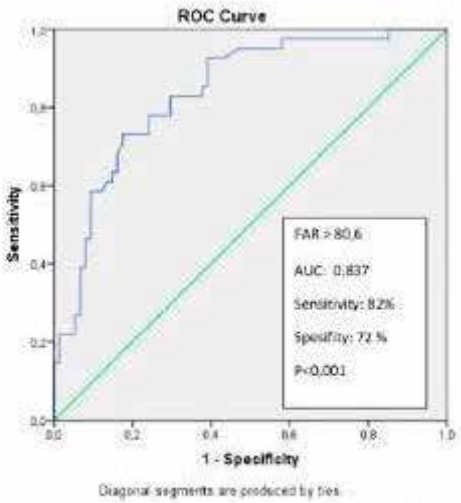

Figure 1. Receiver–operating characteristic (ROC) curve analysis and cut-off value of FAR in patients with NSTEMI, who have high SS>22. AUC indicates area under curve; CI, confidence interval.

Multivariate regression analysis of potential predictors of CAD severity in patients with NSTEMI

	p value	Odds Ratio	%95 CI
Current Smoker	0,042	3,114	1,042-9,038
Hypertension, n (%)	0,182	2,053	0,714-5,901
Heart Rate	0,037	1,045	1,003-1,090
Lv EF	0,065	0,943	0,886-1,004
FAR	0,001	1,105	1,057-1,156

OA-10 ASSOCIATION BETWEEN SERUM ELABELA LEVELS AND CORONARY SLOW-FLOW PHENOMENON

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Background: Coronary slow-flow phenomenon (CSFP) is characterized by delayed distal vessel opacification of contrast, in the absence of significant epicardial coronary stenosis. CSFP has been reported as a cause of chest pain and abnormal noninvasive ischemic tests and is often underrecogni- zed. The beneficial effects of Elabela on the cardiovascular system have been shown in some animal models, in vitro studies, and recently in human studies. The aim of the study is to evaluate the level of serum elabela in patients with CSFP.

Method: The study was planned cross-sectionally and prospectively. Fifty patients (28.0% female, mean age 59.4 ± 5.31 years) with CSFP and 33 pa- tients (42.4% female, mean age 60.1 ± 6.59 years) with normal coronary arteries were included in the study. In addition to the age, sex, demographic characteristics and routine laboratory tests of the patients, serum Elabela levels were measured.

Result: Demographic characteristics and laboratory values were similar and shown in table 1 and table 2 (p>0.05, for all). While the mean NT-proBNP was higher in the CFSP group, the Elabela mean was lower (p <0.05). In the multivariate regression analysis, NT-proBNP and Elabela levels were found to be independent predictors for CFSP (table 3).

Conclusion: In our study, we showed that the average Elabela level was low in CFSP patients compared to normal coronary artery patients. To our knowledge, this is the first study to report a relationship between CFSP and serum elabela levels.

Keywords: Elabela, Coronary slow-flow phenomenon, Brain natriuretic peptid

Comparision demographic characteristics and laboratory tests of study population

Variable	CFSP(+) group (n=50)	Control group (n= 33)	p
Age, years	59.4 ± 5.31	60,1 ± 6.59	0.355
Female, % (n)	28.0 (14)	42.4 (14)	0.174
Left ventricular ejection fraction, %	54.7 ± 7.0	55.1 ± 7.6	0.825
Hypertension, % (n)	76.0 (38)	66.5 (26)	0.817
Diabetes mellitus, % (n)	62.0 (31)	66.7 (22)	0.908
Hyperlipidemia, % (n)	66.0 (33)	69.6 (23)	0.756
Current smoker, % (n)	66.0 (33)	60.6 (20)	0.789
Family history of CAD, % (n)	26.0 (13)	33.3 (11)	0.452
Fasting glucose level, mg/dL	102.5 ±28.0	121 ± 55.0	0.057
Hemoglobin, g/dL	13.7 ± 1.89	13.2 ± 1.52	0.207
Hemotocrit, %	39.9 ± 5.57	39.3 ± 3.95	0.584
White blood cell count, x103/mL	8.2 ± 2.02	8.4 ± 2.40	0.692
Platelet count, x103/ mL	265 ± 82	271 ± 51	0.743
Total cholesterol, mg/dL, median	206.5 (53.5)	216 (46.5)	0.955
LDL-Cholesterol, mg/dL, median	132.5 (40.5)	147 (34.5)	0.389
HDL-Cholesterol, mg/ dL	42.1 ± 9.5	44.6 ± 8.5	0.236
Triglyseride, mg/dL, median	173 (103.7)	159 (101.5)	0.147
Urea, mg/dL	34.9 ± 13.93	33.4 ±7.89	0.580
Creatine, mg/dL,	0.84 ±0.27	0.78 ±0.15	0.275
Elabela, ng/mL, median	0.64 (0.40)	1.20 (1.14)	<0.001
NT-proBNP, pg/ml median	25.5 (16.5)	16.0(11.0)	0.001

OA-11 THE RELATIONSHIP BETWEEN NEUTROPHIL LYMPHOCYTE RATIO AND DIASTOLIC DYSFUNCTION IN PATIENTS WITH ISOLATED ESSENTIAL HYPERTENSION

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Objective: Primary hypertension with cardiovascular complications is a disease with high morbidity and mortality. Diastolic dysfunction, frequently accompanying to hypertension, can progress to heart failure with preserved ejection fraction and congestive cardiac failure with systolic dysfunction. In recent studies, it was shown that chronic inflammation is strongly correlated with hypertension and cardiovascular complications. In the present study, we aimed to investigate neutrophil/lymphocyte (N/L) ratio and its relationship with development of diastolic dysfunction in hypertensive pati- ents with or without diastolic dysfunction.

Methods: The study included 50 patients with diastolic function and another 50 patients without diastolic dysfunction who presented to cardiology outpatient clinic for treatment of hypertension. Physical examination, outpatient blood pressure measurement, detailed CV and habituation (alcohol, smoking) inquiry, 12-lead ECG were applied to all patients. In all patients, ventricular systolic and diastolic functions were comprehensively evaluated with echocardiography. Complete blood count, C-reactive protein (CRP), N/L ratio was studied in blood samples drawn.

Results: There was no significant difference between groups regarding demographic characteristics (age, gender) and biochemistry values (glucose, blood urea nitrogen, creatinine, lipid panel) Stage of hypertension and antihypertensive medications used was similar in both groups. It was found that white blood cell count and N/L ratio were significantly higher in the group with diastolic dysfunction ($p<0.001$). There was a strong correlation between presence of diastolic dysfunction and N/L ratio ($r=0.814$; $p<0.001$). Although C-reactive protein (CRP), another inflammatory biomarker, was found to be within reference range in both groups, it was found to be significantly higher in group with diastolic dysfunction when compared to group without diastolic dysfunction ($p=0.020$).

Conclusion: In patients with hypertension, diastolic dysfunction is related to left ventricular hypertrophy, coronary artery disease and hypertensi- on-related systolic cardiac failure. Thus, elevated N/L ratio can be used to predict progression of hypertensive patients to cardiac failure as readily available and inexpensive inflammatory marker.

Keywords: Hypertension, diastolic dysfunction, neutrophil/lymphocyte ratio

Figure: Diastolic dysfunction and N / L ratio relationship

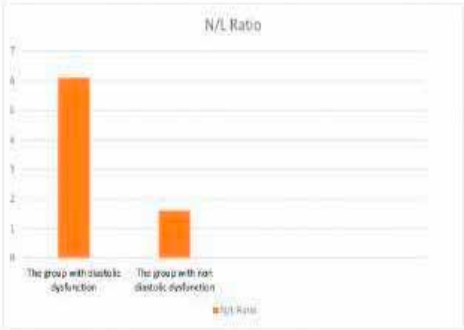

Table 1: Echocardiographic variables according to category of diastolic function

	the group with diastolic dysfunction n=50	the group without diastolic dysfunction n=50	p
EF (%)	62,9± 3,1	65,8± 4,7	0,121
E/A ratio	0.61±0.24	0.94±0.32	<0,05
DT (ms)	202±34	185±24	<0,05
IVRT (ms)	95±12	87±8	<0,05
PVs/PVd	0,96±0,31	0,71±0,21	<0,05
Septum Sa (cm/s)	6,8±1,1	7,3±1,21	0,066
Septum Ea (cm/s)	8,2±2,3	11,1±2,4	<0,05
Septum E/e´ ratio	9,6±2,1	8,6±2,4	0,122
Lateral Sa (cm/s)	7,7±1,8	9,2±2	<0,05
Lateral Ea (cm/s)	9,6±2,3	13,1±2,8	<0,05
Lateral E/e´ ratio	8,4±2,1	6,7±1,8	<0,05

EF,ejection fraction; DT,deceleration time; IVRT,ISOVOLUMETRIC relaxation time; PVs/PVd,Pulmonary VEIN systolic/Pulmonary VEIN diastolic VELOCITY; Sa, peak systolic annular VELOCITY; Ea,peak early diastolic annular VELOCITY

OA-12 THE EFFECT OF PATENT FORAMEN OVALE ON RIGHT VENTRICULAR DIAMETERS AND VOLUMES IN HEALTHY YOUNG SUBJECTS

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Balıkesir University

Objective: The foramen ovale is a small shunt in the interatrial septum during fetal life and closes in the first year of life. The closure is incomplete approximately in one of four of the populations. A patent foramen ovale (PFO) means the foramen ovale did not close properly at birth, so there is still an opening in the septum. Shunt direction is predominantly from left to right in case of patent foramen ovale. Thence, the right ventricle is exposed to increased volume load. The aim of this study was to investigate whether the increase in right ventricular diameters and volumes in healthy young adults with PFO.

Methods: Subjects who underwent transesophageal echocardiography (TEE) for suspected PFO were included in the study. Thirty subjects without PFO were included to the study as a control group. Patients with cardiovascular or other systemic disease such as hypertension, diabetes mellitus, co- ronary artery disease and heart failure, narcotic use, smoking, obesity (body mass index>36 kg/m^2), younger than 18 or older than 40 years were excluded to study. Presence of PFO was determined by TEE during a standardized procedure of infused agitated saline contrast with Valsalva maneuver.

Results: Eighty-eight subjects who met the study criteria were enrolled in the study. There were 25 subjects in the small PFO group and 33 subjects in the large PFO group. Age, gender and body mass index were similar in the between groups. There was no statistically significant difference between groups in terms of right ventricular diameters and volumes.

Conclusion: We found that the presence of PFO and size of the defect did not affect on the right ventricular diameters and volumes. This result can be explained by the fact that the flow from left to right in subjectss with PFO is trivial.

Keywords: Patent foramen ovale, right ventricular diameters, transesophageal echocardiography

Right ventricular echocardiographic findings in the groups

Variable	Control group n=30	Small PFO group n=25	Large PFO group n=33	p
TAD, mm (mean±SD)	26.1±1.61	26.3±1.89	27.3±1.99	0.096
RVBD, mm (mean±SD)	29.6±4.2	29.9±3.02	30.8±2.54	0.334
RVMD, mm (mean±SD)	27.7±4.59	27.4±2.73	28.4±2.74	0.542
RVLD, mm (mean±SD)	63.4±8	63.1±7.75	64.4±8.17	0.839
RVEDA, mm2 (mean±SD)	19.8±4.35	20.5±3.27	20.7±3.12	0.584
RVEDAI, mm/m2 (mean±SD)	11.7±2.23	12.2±1.93	12.6±3.58	0.431
RVESD, mm2 (mean±SD)	8.9±2.25	8.8±2.08	8.8±1.72	0.979
RVESAI, mm/m2 (mean±SD)	5.2±1.21	5.3±1.28	5.4±1.9	0.828
FAC, % (mean±SD)	57.1±5.89	57.8±5.56	57.9±3.75	0.779

p VALUE for difference between the three groups. FAC: Fractional area changing, RVBD: Right VENTRICULAR basal diameter, RVMD: Right VENTRICULAR mid diameter, RVLD: Right VENTRICULAR longitudinal diameter, RVEDA: Right VENTRICULAR end-diastolic area, RVEDAI: Right VENTRICULAR end-diastolic area index, RVESA: Right VENTRICULAR end-systolic area, RVESAI: Right VENTRICULAR end-systolic area index, SD: standard DEVIATION, TAD: Tricuspid annular diameter

OA-14 ISOLATED RIGHT VENTRICULAR SYSTOLIC DYSFUNCTION AFTER LIVER TRANSPLANTATION: PRELIMINARY RESULTS

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OBJECTIVE: Although association of right ventricular functional impairment and advanced chronic liver disease in pulmonary hypertensive subjects has been well-established, the presence of isolated right ventricular systolic dysfunction in transplant recipents remained disregarded. Here we aimed to assess the relationship of baseline clinical, laboratory, and imaging parameters with persistent right ventricular systolic dysfunction (RVD) after elective liver transplantation. This condition was identified by 2D echocardiographic measures.

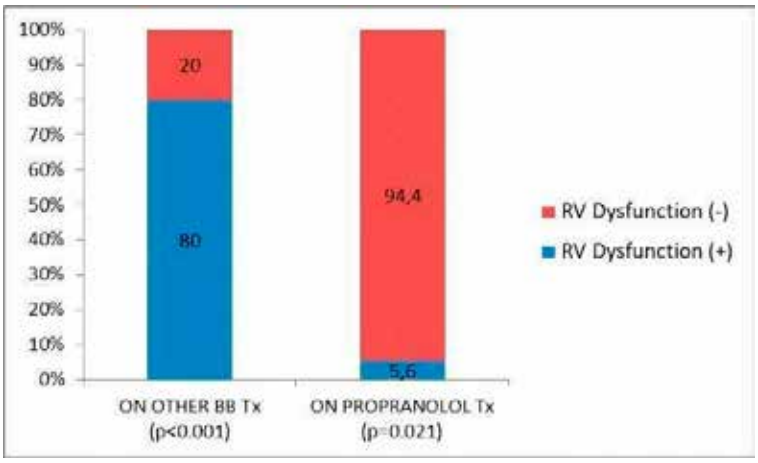
METHODS: 34 liver transplant recipients (54.1±8.7 years, 32,4% female) were involved. All of the patients had chronic liver disease and the proce- dures were elective. Demographic characteristics, baseline blood test results, early postoperative duplex ultrasound measurements of hepatic vascu- lature and initial estimated systolic pulmonary artery pressure (sPAP) values obtained at the time of transplantation procedure were retrospectively collected from the patient database of our facility. Patients were recalled for echocardiographic evaluation. Left ventricular ejection fraction, estimated diastolic performance (E/E'), sPAP, right atriak volume, ratio of the baseline diameters of right and left ventricles, TDI S' of right ventricle, TAPSE, and 2D right ventricular ejection fraction measurements were recorded. RVD was identified by having at least one value below the reference levels of RV S' or TAPSE as defined in the relevant guidelines. Patients were then grouped according to presence of RVD. Major criteria for exclusion were significant left heart disease, severe pulmonary disease, and previous episode of pulmonary embolism.

RESULTS: Isolated RVD was observed at 20,6% (n=7, constituted Group B) of the sample population. The mean interval between the operation and echocardiographic follow-up was 18.1±18.2 months. There was not any statistically significant difference regarding quantitative parameters including baseline and follow-up sPAP values between groups. The frequency of a of gastrointestinal bleeding were higher in RVD (+) group. Additionally, two patients in the sample population with a history of coronary artery disease had both RVD. The fraction of patients who had been receiving propranolol treatment before transplantation was lower in this group (63% vs. 14.3%;p=0.02) (Table 1). Individuals who used an alternative beta blocking agent and did not use propranolol were seemed to have higher rates of isolated RVD (Figure 1).

CONCLUSION: None of the parameters derived from preoperative biochemical work-up, perioperative hepatic vascular imaging, and estimated sPAP measurements were related to the detection of isolated persistant RVD in our study population. The influence of propranolol and other beta blocking agents on this end-point will be further investigated when the sample size reaches to target threshold.

Keywords: Liver transplantation, Propranolol, Right ventricular dysfunction

Figure 1



Comparison of the incidence of right VENTRICULAR dysfunction among patients on propranolol or other beta-blocker treatment at the time of transplanlation. BB, beta-blocker; Tx, treatment; RV, right VENTRICLE.

Table 1

	Overall (n=34)	RVD (-) (n=27)	RVD (+) (n=7)	P value
Age,years; Mean±SD	54.1±8.7	53.6±8.7	56.1±9.1	0.65
Gender,female; % (n)	32.4 (11)	29.6 (8)	42.9 (3)	0.51
BMI, kg/m2; Median [Range]	29.6 [11.5]	29.6 [11.5]	30.5 [7.4]	0.40
Diagnosis-to-transplantation time, years; Mean±SD	5.5±5.3	5.8±5.5	4.6±4.3	0.71
Etiology, viral; % (n)	47.1 (16)	48.1 (13)	42.9 (3)	0.80
Child-Pugh score; Mean±SD	8.2±1.6	8.3±1.5	8,5±2,6	0.43
MELD score; Mean±SD	18.3±6.3	19.3±6.3	14.6±5.1	0.06
Esophageal varice grade; Mean±SD	1.4±1.1	1.5±1.1	1.3±1.1	0.65

	Overall (n=34)	RVD (-) (n=27)	RVD (+) (n=7)	P value
History of GI Bleeding; % (n)	17.6 (6)	11.1 (3)	42.9 (3)	0.05*
Hypertension; % (n)	38.2 (13)	44.4 (12)	14.3 (1)	0.14
Smoking history (>20 package.years); % (n)	41.2 (14)	37 (10)	57.1 (4)	0.34
Coronary artery disease; % (n)	5.9 (2)	0 (0)	28.6 (2)	<0.01*
Propranolol use; % (n)	52.9 (18)	63 (17)	14.3 (1)	0.02*
Spironolactone use; % (n)	61.8 (21)	63 (17)	57.1 (4)	0.78
Other diuretic use; % (n)	67.6 (23)	66.7 (18)	71.4 (5)	0.81
RAS-B use; % (n)	14.7 (5)	18.5 (5)	0 (0)	0.22
CCB use; % (n)	17.6 (6)	18.5 (5)	14.3 (1)	0.79
eGFR, ml/min/1,73m2; Median [Range]	99.8 [143.5]	99.7 [143.5]	99.8 [85.2]	0.93
ALT, U/l; Mean±SD	41.5±29.9	42±31.1	39.5±26.7	0.87
GGT, U/l; Mean±SD	81.8±79.2	69±62.1	131±119.5	0.16
Hemoglobin, g/dl; Median [Range]	10.7 [9.2]	10.5 [9.2]	12.6 [5]	0.24
Platelet count, *1000/µl; Mean±SD	100.2±85.6	87.8±55.8	87.8±55.8	0.59
CRP, mg/l; Mean±SD	15.8±23.1	16.3±24.5	14±18.1	0.90
NT-ProBNP, pg/ml; Mean±SD	180.9±214.9	161±166.5	257.9±353.8	0.30
Portal vein diameter, mm; Median [Range]	10.3 [7.2]	10 [7.2]	11 [3.8]	0.59
Portal vein velocity, cm/sec; Mean±SD	104.9±73.2	113.4±77.2	113.4±77.2	0.18
Portal vein output, ml/min; Mean±SD	2390±1663	2460±1787	2122±1125	0.87
Hepatic vein velocity, cm/sec; Mean±SD	58.9±31.2	58.9±31.2	56±36	0.62
Initial estimated sPAP, mmHg; Mean±SD	29.3±5.4	29.6±6	28.3±2.2	0.68
Follow-up estimated sPAP, mmHg; Mean±SD	27.9±7.3	28±7.5	27.6±7	0.87
LVEF, %; Mean±SD	63.9±3.1	64±3.3	63.3±2.6	0.29
E/E'; Mean±SD	7.2±1.9	7.2±1.9	7±2.2	0.84
RV:LV ratio; Median [Range]	0.76 [0.4]	0.75 [0.28]	0.77 [0.35]	0.36
RA area, cm2; Median [Range]	13.2 [11.7]	12.5 [11.6]	14.4 [7]	0.45

Comparison of demographic, clinical and echocardiographic features of the patients who did or did not HAVE persistent right VENTRICULAR systolic dysfunction. BMI, body mass index; CCB, calcium channel blockers; eGFR, estimated glomerular filtration rate; GI, gastrointestinal; LV, left VENTRICLE; LVEF, left VENTRICULAR ejection fraction; MELD, Model for End-stage LIVER Disease; RA, right atrial; RAS-B, renin-angiotensin system blocking agents; RV, right VENTRICLE; RVD, right VENTRICULAR dysfunction; sPAP, systolic pulmonary arterial pressure.

OA-16 THE 3D ECHOCARDIOGRAPHYC EVALUATION OF CHANGES IN MITRAL REGURGITATION AND LEFT VENTRICULAR FUNCTION DURING DOBUTAMINE STRESS TEST IN PATIENTS WITH FUNCTIONAL MITRAL REGURGITATION

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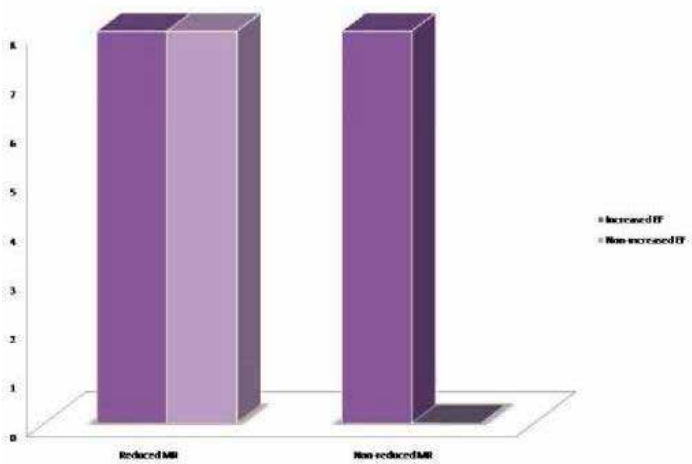
Background: Functional mitral regurgitation (FMR) occurs in approximately 50% of patients with left ventricular (LV) dysfunction and negatively affects survival. LV dilatation and global dysfunction leading to derangement in force–balance relationship of tethering and closing forces and have been proposed as causes of FMR. Dobutamine in its turn results in favorable effect on the force–balance relationship of MV function, improving both tethering and closing forces on the mitral valve (MV) by its effect on LV contraction, although a decrease in FMR is expected, its precise mechanism has been only incompletely defined and results still controversial. All evaluations before were performed usıng 2D echocariographic methods. İn this study we evaluated the relationship between FMR and EF during dobutamine stress test using 3D echocardiography method.
Methods-Results: Twenty patients with depressed LV ejection fraction (EF) (<40%), and at least mild FMR, who had no history of coronary artery disease(CAD) or atrial fibrillation (AF), were eligible for recruitment into the study. Exclusion criteria wass the presence MR caused by intrinsic mitral valvular lesions; and other cardiac diseases, such as congenital defects, aortic valve disease, or pericardial disease.

Transthoracic Echocardiogram (TTE) and Transesophageal echocardiogram (TEE) were performed at rest and during dobutamine infusion (20 µg/kg per minute). All patients underwent 2D and 3D and color Doppler echocardiographic examination. Three-dimensional echocardiography was used for the assessment of LV volumes, EF and vena contracta area (VCA). The patient population was subdivided into patients in whom VCA was reduced >=0,05 cm2 while dobutamine stress test (MR reduction group) and patients whose MR
RV was not reduced (increase in VCA or a <0,05 cm^2 reduction in VCA: MR no-reduction group). In addition, patients were divided into patients who had increase at EF >%10 while dobutamine test and who did not. İn MR reduction group (16 patients) only 8 patients had increase in EF. And in group with increased EF (12 patients) only 8 patients demonstrated reduction in VCA

Conclusion: The correlation between lowering FMR and reduction of the left ventricular volume changes or increase in EF (left ventricular contractile reserve) during dobutamine stress test was not observed.Thus force-balance relationship is not the only mechanism that influences MR volume. Futher evaluations are needed to understand precise mechanism of FMR
Keywords: Functional mitral regurgitation, 3D echocardiography, dobutamine stress test

Correlation between LV EF and MR changes during Dobutamine stress test



EF- Ejection fraction, MR-mitral regurgitation, LV- left VENTRICLE

demograpcic characteristics

Patient number (n)	20
Women (n)	3
Men (n)	7
AGE (years)	34,9500±11,25529
QRS duration (ms)	122,5000±6,38666
Disease Duration (months)	29,4000±25,0018
HT (n)	3
DM(n)	0
Hypothyroidism (n)	1
VCA (cm2)	0,2398±0,20212
EF(%)	16,9400±5,22488
ESV(ml)	228,3400±77,3730
SV (ml)	44,8650±16,05265

CKD-Chronic kidney disease, DM-Diabetes mellitus, EF- Ejection fraction,ESV- End systolic VOLUME, HT-Hypertension, SV-systolic VOLUME, VCA-VENA contracta area

OA-17 LONG QT AND TORSADE DE POINTES IN A PATIENT WITH MALIGN MELANOMA AND ON COMBINATION THERAPY WITH COBIMETINIB, VEMURAFENIB AND ANTIDEPRESSANT DRUGS (ESCITALOPRAM AND MIRTAZAPINE)

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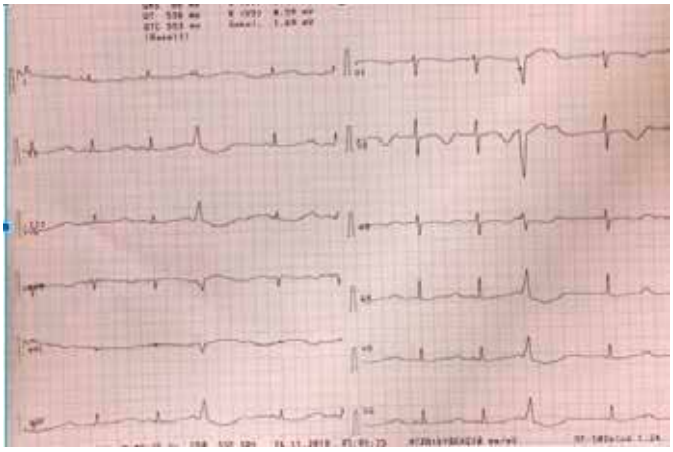
Introduction: Tyrosine Kinase Inhibitors (TKI), particularly the combination of MEK inhibitors (cobimetinib, trametinib) and BRAF inhibitors (vemura- fenib, dabrafenib) is now the first-line treatment in patients with BRAF V600-mutated metastatic melanoma. Common side effects of BRAF inhibitors include cutaneous toxicity, nephrotoxicity and cardiotoxicity. Most TKIs significantly increase the QTc interval and the incidence of arrhythmias was highest particularly in vemurafenib. The cardiovascular side effects of antidepressants are well established. These drugs usually affect the cardiac action potential (AP), lengthening both depolarization and repolarization phases, resulting in the QRS widening, QT interval prolongation or causing Brugada-like electrocardiogram patterns.

Case: A 68 years old female patient with a diagnosis of malign melanoma presented in our emergency department with recurrent short lasting synco- pe episodes. She was conscious and physical examination was within normal limits. Electrocardiography (ECG) taken in the emergency department showed long QT interval (700 ms) and frequent ventricular extrasystoles (Figure 1). Bedside echocardiography showed no structural heart disease and ejection fraction was normal. She was on cobimetinib and vemurafenib for two years, escitalopram 20 mg for a year and mirtazapine 30 mg for nine months. She was transferred to coronary care unit from emergency department where recurrent R on T phenomenon, TDP and syncope were observed (Figure 2). Blood tests revealed marked hypokalemia (2,7 mg/dL) and elevated creatinine level (1,45 mg/dL). She also mentioned episodes of near syncope 3 months ago when she was prescribed ciprofloxacin for gallbladder infection. All drugs were withhold and patient was followed in Coronary Care Unit for 4 days with continuous rhythm monitoring and potassium replacement. Hypokalemia was persistent and required continuous potassium replacement, indicating persistent hypokalemia. QT interval decreased from 700 to 500 but was still above normal range. For patient's safety; drugs were discontinued and ICD was implanted and patient was discharged with beta blocker and potassium replacement therapy.

Discussion: Combination of MEK inhibitors (cobimetinib, trametinib) and BRAF inhibitors (vemurafenib, dabrafenib) is now the first-line treatment in patients with BRAF V600- mutated metastatic melanoma. Most of these patients are also on antidepressant drugs. Concomitant use of antineoplastic drugs and antidepressants might have synergistic effect on some lethal side effects like hypokalemia, QT prolongation and TDP. So it is vital that these patients should have their renal function tests and ECG followed at regular basis. Discontinuation of drugs should be considered in case of fatal side effects.

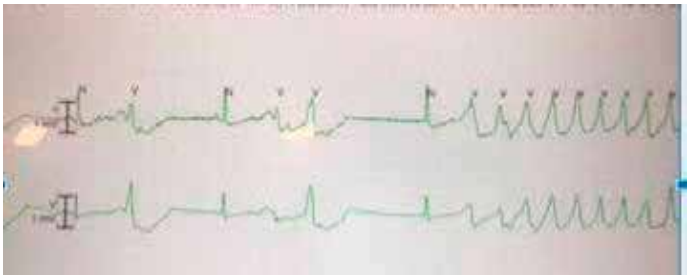
Keywords: antidepressant drugs, cardiotoxicity, cobimetinib, malign melanoma, vemurafenib

Figure 1.



Electrography (ECG) taken in the emergency department showing long QT (700 ms) and frequent ventricular extrasystole

Figure 2.



This rythm stripe was from the telemetry recording during syncope episode. It shows multiple R on T phenomenon and Torsade de Pointes as the cause of syncope

OA-21 PREDICTORS OF VENTRICULAR ARRHYTHMIA AFTER SUCCESSFUL REPERFUSION IN THE PRIMARY PERCUTANEOUS INTERVENTION ERA

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Objective: Clinical and electrophysiological indicators of ventricular arrhythmias (VA) after myocardial infarction (MI) are well described. However, studies about the clinical predictors of VA in the course of MI after successful reperfusion in the primary percutaneous coronary intervention (PCI) era are lacking. In the present study, predictors of VA after successful primary PCI for ST-segment elevation myocardial infarction (STEMI) were analyzed.

Method: 2559 consecutive patients who underwent primary PCI for STEMI were enrolled into the study. 365 patients were excluded from the study because of coronary no-reflow (TIMI flow grade <3) and 127 patients were excluded from the study because of acute and subacute stent thrombosis during hospital stay. Remaining 2067 patients formed the study population. VA was defined as sustained ventricular tachycardia and ventricular fibrillation. Multivariate logistic regression analysis was used to determine independent predictors of VA.

Results: 86 patients (4.1 %) developed VA during hospital stay. Patients with VA were older, less likely to be male and higher rate of diabetes mellitus. While admission white blood cell, glucose, creatinine and peak CK-MB were significantly higher in patients with VA, hemoglobin and left ventricular ejection fraction were significantly lower. Rates of patients with Killip Class >1, new onset atrial fibrillation and need for temporary pacemaker were significantly higher in VA group (Table 1). In univariate logistic regression analysis showed that age, gender, DM, hemoglobin, white blood cell count, creatinine, peal CK-MB, left ventricular ejection fraction, Killip Class >1, new onset atrial fibrillation and need for temporary pacemaker were associ- ated with VA. However, in multivariate logistic regression analysis, only Killip Class >1 (HR 9.813, CI 3.887-24.776, p<0.001),white blood cell count (HR 1.156, CI 1.063-1.257, p=0.001) and need for temporary pacemaker (HR 3.493, CI 1.,75-11.351, p<0.001) were remained significant and found as independent predictors of development of VA.

Conclusion: Results of the present study showed that a Killip Class >1, higher white blood cell count and need for temporary pacemaker were independently associated with development of VA during hospital stay in patients underwent successful primary percutaneous intervention for ST- segment elevation myocardial infarction. Further studies are required to elucidate the predictors of VA after successful PCI for STEMI.

Keywords: ventricular arrhythmia, myocardial infarction, primary percutaneous intervention

Table 1

		Univariable		Multivariable
Variables	OR (95 % CI)	p value	OR (95 % CI)	p value
Age	1.043 (1.024-1.062)	<0.001	1.025 (0.990-1.062)	0.167
Male gender	0.502 (0.311-0.811)	0.005	0.588 (0.213-1.623)	0.306
Diabetes Mellitus	3.655 (2.363-5.654)	<0.001	1.507 (0.605-3.754)	0.379
Previous PCI	0.366 (0.061-2.209)	0.273	-	-
Previous MI	1.764 (0.917-3.396)	0.089	1.730 (0.596-5.021)	0.313
Hemoglobin	0.838 (0.748-0.939)	0.002	1.010 (0.802-1.271)	0.935
WBC	1.196 (1.145-1.250)	<0.001	1.156 (1.063-1.257)	0.001
Glucose	1.005 (1.000-1.009)	0.050	1.002 (0.998-1.007)	0.262
Creatinine	1.836 (1.340-2.490)	<0.001	1.310 (0.656-2.618)	0.444
Peak CK-MB	1.002 (1.001-1.003)	<0.001	1.001 (0.999-1.002)	0.496
LVEF	0.944 (0.925-0.964)	<0.001	1.071 (0.981-1.055)	1.055
Killip Class >1	24.92 (14.14-42.82)	<0.001	9.813 (3.887-24.776)	<0.001
New onset AF	7.543 (3.143-18.103)	0.001	1.348 (0.216-8.427)	0.749
Temporary pacemaker	7.837 (4.210-14.588)	0.001	3.493 (1.075-11.351)	<0.001

Predictors of VENTRICULAR arrhythmia in MULTIVARIATE logistic regression analysis

OA-22 HOW MANY MEDICAL SCHOOL STUDENTS WANT TO BE CARDIOLOGIST IN TURKEY?

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Background: Entering and continuing education in medical school is a long and difficult process. Cardiology education is a challenging process that requires additional training and effort after this process. In this study, we tried to determine the change in the tendencies of medical school students to choose cardiology specialization over the years.

Material-Methods: In this study, 2060 medical students from different faculties of medicine were included in Turkey. The questionnaire used in the study was delivered to the participants through the SurveyMonkey online statistics program.

Results: This study was attended by medical students from 52 different provinces in Turkey, mainly Ankara (25.2%), Istanbul (18.1%), Adana (6.9%), Izmir (4.9%) and Elazig (4%). 60.7% of the participants were female and 39.3% were male. While 88.8% medical students were between the ages of 18-24, 11.2% were in the > 24 age group. The rates of requesting cardiology specialization according to the medical school periods are given in table 1.

Conclusions: Despite the fact that cardiology education is a difficult and long process, it can be explained by the fact that the desire of medical stu- dents to choose the specialty of cardiology has increased over the years due to cardiology has a versatile and dynamic structure and that medical students understand that heart diseases are still the leading cause of mortality in the society. The decrease in the desire to choose a cardiology in the intern doctor period may be related to difficult and tiring internship periods.

Keywords: medical student, specialty of cardiology, education

Table 1. The rates of desire to choose the specialty of Cardiology

Year of study	Gender (female/male) (%)	Preferred Cardiology (%)
I	75/25	5.2
II	72.2/27.8	5.1
III	63.2/36.8	10.3
IV	46.4/53.6	9.1
V	48.6/51.4	9.8
Intern Dr.	28.6/71.4	6.5

OA-23 EVALUATION OF THE ELECTROCARDIOGRAPHIC FINDINGS OF PATIENTS WITH LIMB-GIRDLE MUSCULAR DYSTROPHIES

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Objective: Limb-girdle muscular dystrophies (LGMD) are a group of rare progressive genetic disorders that are characterized by wasting and weak- ness of the muscles of the hip and shoulder areas. A diagnosis of LGMD is made based upon a thorough clinical evaluation, biopsy, electromyog- raphy and molecular genetic testing. Although the dominant forms tend to appear after the second decade of life, the onset of symptoms in LGMD varies from early childhood to adulthood. In this group of patients, cardiologic abnormalities usually begin after the muscle involvement develops. Conduction disorders and dysrhythmias increased with age and include atrioventricular block, atrial fibrillation, junction escape rhythm, and brady- arrhythmias. Since cardiomyopathy or conduction disorders can be life-threatening, monitoring heart involvement and clinical intervention when ne- cessary are crucial. Our aim in this study was to examine the electrocardiograms and 24-hour Holter monitoring data of patients who were diagnosed with the LGMD and compare them with control group.

Method: A total of 61 patients, 31 of them were being followed up with the diagnosis of LGMD, were included in the study. The standard 12-lead electrocardiography (ECG) was recorded for each patient with a paper speed of 25 mm/s, amplitude of 10 mm/mV, and filter range of 0.15-100 Hz. ECG strips were scanned, transferred to the computer and analysed by using digital image processing software (imagej.nih.gov/ij/). All measurements were performed by two experienced cardiologists and compared with the appropriate statistical methods.

Results: The number of patients with fragmented QRS (f-QRS) were significantly higher in patients with LGMD than those of control group (8 (25.8%) vs 2 (6.7%), p=0.045), however; there was no significant difference between the groups in terms of PR interval, the corrected QT interval, the QRS duration, and the T peak to T end interval. In addition, the standard deviation of the N-N intervals (SDNN) and standard deviation of sequential 5-mi- nute N-N intervals (SDANN) obtained from the Holter recordings were significantly lower in patients with LGMD than the control group (SDNN 60.1
± 10.6 vs 90.3 ± 30.0 ms; p < 0.005, SDANN 90.0 ± 28.0 vs 119.0 ± 33.3 ms; p = 0.001).

Conclusion: Cardiomyopathy or conduction defects may be life threatening in patients with LGMD. Therefore, monitoring of heart involvement and clinical intervention, when needed, is crucial. The f-QRS indicating non-homogeneous myocardial conduction may be a clue for cardiac involvement in LGMD patients. Therefore, closer monitoring of patients with f-QRS observed during surface ECG may be related with a worse prognosis of these patients. Additionally, autonomic dysfunction in LGMD patients may be associated with psychological stress. Early recognition and treatment of anxiety and depression, which are common among these patients, may be important.

Keywords: Limb-girdle muscular dystrophies, fragmented QRS, autonomic dysfunction

Table: Baseline demographic, electrocardiographic and laboratory parameters of the patients with Limb-girdle muscular dystrophy and control group.

	Patients with LGMD (n: 31)	Control group (n: 30)	All patients (n=61)	P value
Age, years	30±13	29±12	30±12	0,603
Male gender, n (%)	16 (%51,6)	13 (%43)	29 (%48)	0,521
Height, cm	163 ± 11	170 ± 8	166 ± 10	0,021
Weight, kg	59 ± 11	69 ± 12	64 ± 13	0,02
LVEF, %	63 ± 3	64 ± 3	63 ± 3	0,812
Heart rate, beat/min	81 ± 13	86 ± 15	83 ± 14	0,172
QT interval, ms	352 ± 20	349 ± 26	351 ± 23	0,564
Corrected QT interval, ms	407 ± 26	414 ± 19	411 ± 23	0,184
QRS duration, ms	92 ± 13	92 ± 10	92 ± 12	0,806
Number of patients with fragmented QRS, n (%)	8 (%26)	2 (%7)	10 (%16)	0,045
Tp-e interval in lead V5, ms	88 ± 12	86 ± 5	87 ± 9	0,702
Tp-e interval in lead DII, ms	88 ± 13	83 ± 7	85 ± 10	0,204
PR interval, ms	139 ± 21	140 ± 15	139 ± 18	0,702
SDANN, ms	90 ± 28	119 ± 33	104 ± 33	0,001
SDNN, ms	60 ± 11	90 ± 30	75 ± 27	<0,001
Maximum heart rate during the 24 hour holter monitoring (beat/min)	136 ± 16	154 ± 19	145 ± 20	0,001
Minimum heart rate during the 24 hour holter monitoring (beat/min)	44 ± 7	46 ± 7	45 ± 7	0,366
Mean heart rate during the 24 hour holter monitoring (beat/min)	82 ± 9	82 ± 7	82 ± 8	0,851
Number of patients with PVC during the 24 hour holter monitoring, n (%)	8 (%25)	18 (%60)	26 (%46)	0.007
Number of PAC during the 24 hour holter monitoring, beats	3 (0-14, IQR)	2 (0-10, IQR)	2 (0-14, IQR)	0.628
Creatinine (mg/dL)	0,56 ± 0,28	0,77 ± 0,14	0,66 ± 0,25	0,010
Potassium (mmol/L)	4,11 ± 0,77	4,33 ± 0,29	4,22 ± 0,59	0,054
Calcium (mg/dL)	9,45 ± 0,5	9,72 ± 0,35	9,58 ± 0,45	0,007
Magnesium (mg/dL)	1,89 ± 0,16	1,88 ± 0,11	1,89 ± 0,14	0,573
White blood cell count (103/uL)	7,92 ± 2,61	8,46 ± 2,36	8,19 ± 2,49	0,432
Neutrophil (103/uL)	4,9 ± 1,9	5,3 ± 2,0	5,1 ± 1,9	0,686
Lymphocyte (103/uL)	2,3 ± 7	2,5 ± 0,6	2,4 ± 0,7	0,411
Hemoglobin (gr/dL)	14,5 ± 2,0	14,1 ± 1,2	14,3 ± 1,7	0,460
Platelet (103/uL)	276 ± 74	280 ± 52	277 ± 65	0,676
C-reactive protein (mg/L)	3,00 ± 2,21	2,17 ± 0,36	2,59 ± 1,64	0,392
Thyroid stimulating hormone (mIU/L)	2,0 ± 1,6	1,7 ± 11	2,0 ± 1,2	0,094
Free T3 (pmol/l)	3,3 ± 0,6	3,3 ± 0,5	3,3 ± 0,6	0,366
Free T4 (pmol/L)	1,5 ± 0,3	1,4 ± 0,4	1,4 ± 0,4	0,037

ABBREVIATIONS: LGMD; Limb-girdle muscular dystrophy, LVEF; Left VENTRICULAR ejection fraction, Tp-e; T peak to end, SDANN; standard DEVIATION of sequential 5-minute N-N INTERVALS, SDNN; standard DEVIATION of the N-N INTERVALS, PVC; premature VENTRICULAR contraction, PAC; premature atrial contraction.

OA-24 THE EFFECT OF ONLINE EDUCATION ON ELECTROCARDIOGRAPHY LEARNING

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Introduction: Education was interrupted in many countries due to Covid-19 pandemic. Turkey in March 2020 and was interrupted education was passed later in online education. Formal education is compulsory in internship periods in medical faculty education.

Electrocardiography (ECG) is an essential diagnostic method in which the electrical activities of the heart are evaluated. 12-lead ECG remains one of the most widely used and readily available diagnostic tests in modern medicine. However, the practical power of the 12-lead ECG is based on the clinician's ability to interpret this test accurately. Unfortunately, numerous studies have shown worrying errors and variability rates in interpreting ECGs among trainees at all levels of education.

Methods: In our study, we evaluated the ECG knowledge levels by surveying the students who received online ECG training in the 2019-2020 acade- mic year and received formal ECG training in the same academic year. A total of 92 students, 46 students from each group, were included in the study. The students involved in the study were asked about age, gender and whether they had previously received online education. Besides, to evaluate the ECG levels, the students were asked 20 questions with six shallows, consisting of zero (I do not know), 5 (I know exactly). The answers given by each student were evaluated over 100.

Results: While the average age in the group receiving formal education was 23.7 ± 1.2, the average age in the group receiving online educa was
24.0 ± 1.7. The gender frequencies of the students were similar between the groups (formal education: M / F: 21/25, 46.6 / 53.4%, on education: M
/ F: 22/24, 47.8 / 52.2 %). When the scores were evaluated, the average in the group receiving formal education was 73.04 ± 13.21, while the average in the online education group was 48.36 ± 21.16 (p =.000).

Conclusion: In the studies conducted before and after graduation, there are significant deficiencies in ECG education. It has been shown that medical students cannot be diagnosed with MI between 26% and 62%. Similar studies have missed the diagnosis of 56% ventricular tachycardia. When the diagnosis is missed, it is essential to be diagnosed in situations that cause vital problems.

In our study, it was observed that students who received online education had significantly less ECG knowledge than students who received formal training. Therefore, if online education is required for any reason in the medical school, different methods should be planned to increase the quality of ECG education and the learning level of students. There is also a need for more extensive studies on why deficiencies are caused and how they can be corrected.

Table 1

	Online education	Formal education	p
Number	46	46	
M/F	22/24(47.8/52.2 %)	21/25(46.7/53.3%)	
Ages	24.1±1.7	23.7±1.2	
Score	48.3 ± 21.1	73.0 ± 13.2	.000

Students' characteristics and scores

OA-25 DOES HEART FAILURE INTERFERE WITH KIDNEY TRANSPLANTATION?

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Objective: The pathophysiological interaction between the heart and the kidneys is known as cardio-renal syndrome. It might lead to heart failure (HF) and was shown to relate to renal function, which might in turn worsen the prognosis of kidney transplantation therapy. Therefore, renal trans- plantation in a patient with cardiac dysfunction is regarded as a critical situation. Some authors suggest that refractory HF should be considered as a contraindication to kidney transplantation (KT). This report aimed to present four patients, who all had high mortality risks because of a severe HF due to renal failure and showed a significant recovery in the cardiac function in follow-up period after KT.

Case series: Four patients aged between 47 and 64 years old who were suffering from chronic kidney disease (CKD), under dialysis therapy for equal or more than 3 months, and listed for KT were referred to the cardiology clinic of Yeditepe University Hospital for pre-operative cardiologic evaluation. All patients had severe HF (<35%) while listed for KT. The coronary angiography was performed 3 of the patient who did not have coronary artery disease (CAD) accordingly to diagnose any underlying coronary artery disease. However, the three of the patients were free from any coronary artery disease that might cause HF. One of the patient had CAD and in 2016 coronary stent implantation performed however myocardial perfusion scintig- raphy (MPS) performed and inferolateral scar with no ischemic area determined. Three patients were prescribed with carvedilol tb in several doses. Therefore, the HF was thought to originate as a result of CKD for 3 cases. Also the one who had CAD before was thought to getting worse as a result of CKD. All patients had KT. The pre- and post-transplantation period was successful. The baseline demographics, and pre- and post-transplantation findings including left ventricle ejection fraction (LVEF) and global longitudinal peak strain (GLPS) were listed in table 1. A continuous improvement of the heart function was observed and ejection fractions were considerably increased even in 6 months.

Conclusion: To conclude, patients with extremely low LVEF are not often considered for KT because of the high risk of perioperative complications and high mortality. Therefore, some authors suggest that when patients with reduced LVEF present for KT it should be discussed in a deep manner whether such patients should be accepted and wait-listed for transplantation. However, in the real-life data presented in this case series with end stage CKD, showed considerable improvement in the LVEF in 6 months, which was showing that it might be possible for some patients with severe heart and renal failure to present significant recovery in both heart and renal functions, even if LVEF was as low as 15%.

Keywords: heart failure, chronic kidney disease, kidney transplantation

	Patient A	Patient B	Patient C	Patient D
Age/Sex	47/male	57/female	49/male	64/male
HT	Positive	Negative	Positive	Positive
DM	Negative	Negative	Positive	Positive
Smoking	Positive	Negative	Positive	Ex-smoker
HL	Negative	Negative	Negative	Positive
CAD	Negative	Negative	Negative	Positive
Etyology of CKD	Hypertensive nephrosclerosis	Cresentic Glomerulonephritis	Diabetic and hypertensive nephropathy-Vesicouretral Reflux(after first tx)	Diabetic and hypertensive nephropathy
Duration of Dialysis	3 years	5 months	intermittant for 11 years- regular for the last year	3 moths
Medications	benidipin acetylsalicylic acid	methylprednisolone, folbiol, furosemid	anti-phosphate, folbiol, furosemid	acetylsalicylic acid, furosemide, folbiol, carvedilol
Previous Transplantations	no	no	in 2008 one time	no
Echocardiography-performed date	preoperative:01.11.2018 postoperative:24.06.2019	preoperative:14.05.2019 postoperative:16.11.2019	preoperative:11.01.2019 postoperative:30.09.2019	preoperative:10.09.2019 postoperative:27.05.2020
Echocardiography-LV EF	preoperative:15% postoperative:65%	preoperative:26% postoperative:63%	preoperative:30% postoperative:65%	preoperative:33% postoperative:45%
Echocardiography-IVSD	preoperative:17mm postoperative:16mm	preoperative:13mm postoperative:11mm	preoperative:16mm postoperative:14mm	preoperative:14mm postoperative:14mm
Echocardiography-PWD	preoperative:16mm postoperative:16mm	preoperative:12mm postoperative:11mm	preoperative:15mm postoperative:13mm	preoperative:13mm postoperative:13mm
Echocardiography-LVEDD	preoperative:54mm postoperative:51mm	preoperative:57mm postoperative:45mm	preoperative:71mm postoperative:55mm	preoperative:65mm postoperative:56mm
Echocardiography-LVSD	preoperative:51mm postoperative:35mm	preoperative:48mm postoperative:30mm	preoperative:62mm postoperative:37mm	preoperative:57mm postoperative:47mm
Echocardiography-Diastolic function	preoperative: Grade 3 D.D. postoperative: Grade 1 D.D.	preoperative: Grade 3 D.D. postoperative: Grade 1 D.D.	preoperative: Grade 3 D.D. postoperative: Grade 1 D.D.	preoperative:Grade 1 D.D. postoperative: Grade 1 D.D.

	Patient A	Patient B	Patient C	Patient D
Echocardiography- LA diameter	preoperative: 48mm postoperative: 44mm	preoperative: 46mm postoperative: 37mm	preoperative: 41mm postoperative: 40mm	preoperative: 57mm postoperative: 47mm
Echocardiography-valves functions	preoperative: mild mitral and aortic valve regurgitation postoperative: mild mitral valve regurgitation	preoperative: severe mitral valve regurgitation postoperative: mild mitral valve regurgitation	preoperative: mild mitral valve regurgitation postoperative: normal	preoperative: mild mitral valve regurgitation postoperative: minimal mitral valve regurgitation
Echocardiography-sPAPG	preoperative: 50 mmHg postoperative: 30 mmHg	preoperative: 45 mmHg postoperative: 25 mmHg	preoperative: 30 mmHg postoperative: 20 mmHg	preoperative: 30 mmHg postoperative: 20 mmHg
Echocardiography-GLPS	preoperative: -5% postoperative: -13,7%	preoperative: -7,8% postoperative: -19,4%	preoperative: -11,5% postoperative: -16,6%	preoperative: -11,7% postoperative: -14,5%
Effort Test Result	no	no	no	no
MPS result	no	no	no	yes, inferolateral scar with no ischemic area
Coronary angiography result	2017 normal	2019 normal	2018 normal	in 2016 stent implantation to one coronary artery
Date of Renal Transplantation	13.12.2018	23.05.2019	29.03.2019	14.12.2019
Creatinine	preoperative:4,27 mg/dL postoperative: 1,17 mg/dL	preoperative:4,72 mg/dL postoperative:0,85mg/dL	preoperative:11.18mg/dL postoperative:0,92mg/dL	preoperative:4,81mg/dL postoperative:1,06mg/dL
GFR-preop	16 ml/dk/1.73m2	10 ml/dk/1.73m2	5 ml/dk/1.73m2	12 ml/dk/1.73m2
GFR-postop	74 ml/dk/1.73m2	77 ml/dk/1.73m2	98 ml/dk/1.73m2	74 ml/dk/1.73m2
Subsequent Treatements	Carvedilol 3,125 mg 2x1	Carvedilol 6,25mg 1x1	Carvedilol 25 mg 2x1	no

HT; Hypertension, DM; Diabetes mellitus, Hyperlipidemia;HL, CAD; Coronary artery diseases, CKD;Chronic kidney disease, LV EF; Left Ventricular Ejection Fraction, IVSD;INTERVENTRICULAR septal diameter, PWD;posterior wall diameter, LVEDD;left VENTRICULAR end-diastolic dimension, LVSD;left VENTRICULAR end-systolic dimension, LA;left atrium, sPAP; systolic pulmonary artery pressure, GLPS; Global longitudinal peak strain, D.D.; Diastolic dysfunction, MPS; myocardial perfusion scintigraphy, GFR; glomerular filtration rate, tx;transplantation

OA-27 INTENSIVE CARE RESULTS AFTER CORONARY ARTERY BYPASS GRAFTING OPERATION WITH PATIENTS WITH TROPONIN I LEVEL> 1000 NG/DL

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Introduction: In patients with coronary artery disease(CAD) who have myocardial infarction, percutaneous coronary intervention (PKG) or emer- gency coronary artery bypass grafting (CABG) may be required within the first 6 hours if the angina persists despite an adequate medical treatment. Generally, troponin-I level is known to be increased after myocardial infarction (MI). In this study, we aimed to investigate the relation between high troponin-I levels with postoperative mortality and morbidity in patients undergoing emergency CABG with high troponin-I level.

Methods: In our study, we have examined the intensive care unit (ICU) follow-ups of 50 patients with high troponin-I level (> 1000 ng / dl) (Normal values: 0-17.5 ng / dl) who underwent emergency CABG within the first 6 hours. 32 patients were male and 18 were female. Mean age was 61.4 ± 3.1 and mean preoperative Ejection Fraction (EF) was 48 ± 12 %. None of them received preoperative inotropic support.

Results: The duration of intubation due to lung problems was prolonged in 4 patients. 8 patients needed to recieve high dose inotrop support. 12 patients were transfered to ICU with high-dose inotropic support after the operation, while 19 patients with low-dose inotropic support. In 22 pati- ents, intra-aortic balloon pump (IABP) was needed while transfering to ICU. The IABP withdrawal time was 43 ± 16 hours. In patients with high-dose inotrops, weaning has been done according to blood pressure. The postoperative ECO result was 50 ± 10 %. The time of ICU stay was between 4 and 14 days. The mortality rate was 6 % and it was because of the cardiogenic shock.

Conclusion: Patients with high troponin-I levels, need an adequate inotropic and IABP support in the postoperative period, even if their EF values are normal. Under all these circumstances and needs, duration of ICU stays are getting longer.

Keywords: troponin, cardiac surgery, coronary artery bypass grafting, intensive care unit

baseline characteristics, results of intraoperative and postoperative

	n	%
Gender Male Female	32 18	64 36
Age (years)	61.4 +- 3.1	
DM Yes No	28 22	56 44
HT Yes No	33 17	66 34
Preop EF (%)	48 +- 12	
Preop Troponin I	1880 +- 790	
CABG On - Pump Off - Pump	4 46	8 92
Vessels in CABG one-vessel two-vessels three-vessels four vessels five vessels	3 8 21 13 5	6 16 42 26 10
POSTOP		
Low-dose Inotrop High-dose Inotrop IABP	19 12 22	38 24 44
Prolonged Intubation (>24 hours)	4	8
Prolonged Inotrop (> 5 days)	8	16
Withdraw IABP time (hours)	43 +- 16	
Postop EF (%)	50 +- 10	
ICU stay time (days)	4-14	
Mortality	3	6

OA-28 EVALUATION OF THE NEUTROPHIL-TO-LYMPHOCYTE RATIO AND AORTIC-FLOW PROPAGATION VELOCITY IN PATIENTS WITH CORONARY SLOW FLOW

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Background: Neutrophil-to-lymphocyte ratio (NLR) is a novel inflammatory marker of systemic inflammation. Increased microvascular resistance due to chronic inflammation is known to be one of the mechanisms associated with the coronary slow flow (CSF). Aortic flow propagation velocity (APV) is a novel echocardiographic parameter in the evaluation of the aortic stiffness. In this study, we aimed to evaluate the relationship between CSF and NLR-APV.

Material-Method: Eighty-six patients with CSF and 43 patients with normal coronary flow were enrolled in this study. The study subjects underwent coronary angiography and the coronary flow rate measured by Thrombolysis in Myocardial Infarction Frame Count (TFC) method. Complete blood counts were obtained. Demographic, clinical, and echocardiographic characteristics of the patients were recorded. The NLR and APV values were compared between the groups.

Results: APV values and NLR were significantly higher in the CSF group. TIMI frame counts were significantly higher in the CSF group. There was a significant correlation between the TFC and NLR and APV values. The correlation analyzes between the NLR and APV was positive and significant (r=0.370 p=0.001). In multivariate analyses, APV (OR: 1.164, CI: 1.078-1.257, p=0.001) was an independent predictor of CSF.

Conclusion: This study demonstrated an association between CSF and APV values and NLR. We showed that the APV as an independent predictor of SCF.

Keywords: Coronary slow flow, Aortic velocity propagation, Neutrophil-to-lymphocyte ratio

Figure 1

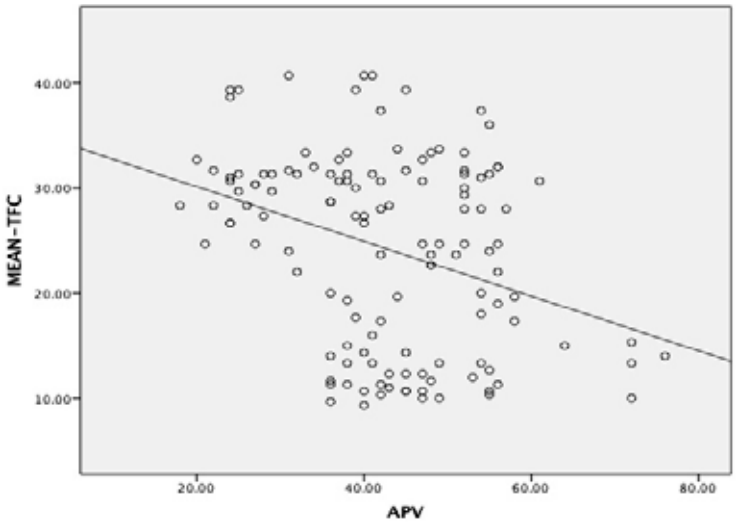

Table-1. The demographic and clinical data of the study population

	CSF (n=86)	Control (n=43)	p
Age (years)	51.48±10.18	46.07±8.72	0.01
Male %(n)	66(38)	33(19)	0.95
Hypertension %(n)	68(28)	31(13)	0.78
White blood cell count (103/mm3)	7.93±1.64	7.25±2.01	0.04
Lymphocyte (103/mm3)	2.49±0.82	2.88±0.75	0.01
Neutrophil (103/mm3)	6.27±0.99	5.93±0.79	0.05
NLR n	3.30±2.81	2.33±1.27	0.03
Descending aorta diameter (cm)	2.97±0.24	2.78±0.28	<0.01
DT (msec)	208.86±43.08	186.05±19.17	<0.01
IVRT (msec)	90.94±15.69	81.63±5.20	<0.01
APV	39.93±11.49	48.09±10.67	<0.01

CSF, Coronary slow flow; NLR, Neutrophil -to-Lymphocyte ratio;N DT, deceleration time; IVRT, ISOVOLUMIC relaxation time; APV, Aortic propagation VELOCITY.

OA-29 BIOCHEMICAL PARAMETERS IN PREDICTING SHORT TERM MORTALITY IN ACUTE PULMONARY EMBOLISM

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İntroduction: Predicting early death of pulmonary embolism is important to give right treatment strategy, however There are missing points regarding the assesement of severity and early death in acute pulmonary embolism. İn this study we evaluated biochemical parameters which are potential candidate for early pulmonary embolism related death.

Methods: In this single center, retrospective study 90 patients hospitilized with pulmonary embolism between May 2019 and December 2019 were included. Patients were divided into two groups as survival and non survivals at 30 days. Independent t test (if normally distrubuted) or Mann Whit- ney U test (if not normally distrubuted) are used to compare the groups. If the variables are categorical, chi-square analysis was used. To detect the independent risk factors of mortality was detected by logistic regression analysis. The investigation for a mortality cut off value for rdw was based on receiver–operating characteristic (ROC) curve.

Results: The mean age of the population was 59.9±17.85 and 41.6% was male. The mean follow up period was 26±15.03 days. The general charac- teristics and biochemical parameters of patients are represented in Table 1. Age (p=0.000), systolic blood pressure (p=0.041), albumine (p=0.000), calcium (p=0.002), wbc (p=0.029) and rdw (p=0.000) were found to be statistically different between survival and non-survival groups. However mpv was not statistically significant between the groups (p=0.443). Age, wbc and rdw variables were higher in survivors, while systolic blood pressure, calcium and albumin were higher in the opposite group. Accordingly, significant differences were found in ast (p=0.015), total bilirubine (p=0.037), direct bilirubine (p=0.041), creatin (p=0.027), bun (p=0.000) and crp (p=0.003) by Mann Whitney U test. All six variables were higher than those who died. İn addition to this the mortality was higher in male (chi-square analysis). The independent risk factors of short term mortality were; age (0.042), gender (0.012) and rdw (0.012) according to logistic regression analysis.

The area under the curve for rdw was found as 0.771 (95%confidence interval: 0.667-0.875). This value was found to be statistically significant (p=0.000). Rdw value is classified as below 15 and above. In the Figure 1, survival graphs are given that rdw is below 15 and above 15. According to Kaplan Meier analysis results, a significant difference was found between rdw being below 15 and above 15 (p = 0.000 <0.001). Patients with rdw below 15 were more likely to survive than those with rdw above 15.

Conclusion: İn this study, the independent and clinically most relevant combination (and cut-off levels) of clinical and biochemical predictors of early pulmonary embolism related death were determined.

Keywords: pulmonary embolism, biochemical parameters, mortality

Figure 1

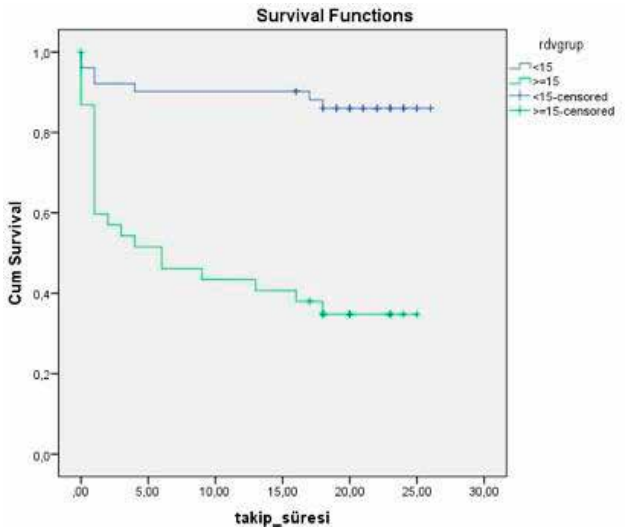

Table 1

Parameter	Survival (n:59)	Non-Survival (n:31)
Age	59.9±17.85	77.3±10.45
Male n (%)	23(34.8%)	14 (60.9%)
SBP mmhg	75.4±13.8	68.7±13.6
Albumine g/dl	3.5±0.51	2.78±0.5
Wbc/ul	10.5±4.7	12.78±4.32
Rdw %	14.8±2.51	17.2±3.08
Creatin mg/dl	0.9±0.22	1.15±0.44
Bun mg/dl	39.58±17.83	72.58±38.9
Crp mg/l	66.6±59.5	114.5±86.8

Table 1:General biochemical parameters of patients

A-30 RELATIONSHIP BETWEEN EPICARDIAL FAT TISSUE THICKNESS AND BREAST ARTERIAL CALCIFICATIONS IN PREMENOPAUSAL WOMEN

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Objective: We aimed to investigate the relationship between epicardial fat tissue thickness (EFT) thickness and breast arterial calcifications (BAC) in premenopausal women.

Materials and Methods: The study group consisted of 80 women with mammography detected BAC and the control group consisted of 86 women without BAC. Women with hypertension, diabetes mellitus, hyperlipidemia, ischemic heart disease, congestive heart failure, thyroid dysfunction, anemia, renal or hepatic failure, stroke or other chronic medical disorders were excluded from the study. BAC were described as deposits of parallel lines of calcium when the arterial wall was imaged longitudinally or as calcific rings when the arterial wall was imaged transversely. All the subjects underwent full transthoracic echocardiographic examination.

Results: No significant difference was detected between the two groups with respect to age, weight, height, BMI, LVEF, fasting glucose, TC, HDL-C and TG levels. LDL-C level and EFT thickness were statistically significantly higher in the study group compared to the control group (Table 1). Mul- tiple regression analysis showed that EFT thickness, TC, LDL-C and BMI were important associations of BAC.

Conclusion: Our study showed an association between EFT thickness and BAC in patients without structural heart disease. EFT thickness was signi- ficantly higher in patients with BAC. There was a strong association between EFT thickness and BAC. We also found positive associations between EAT thickness and TC, BMI, LDL-C.

EFT has paracrine and vasocrine activities, have both harmful and protective effects on heart through release of variety of adipocytokines. Increased EFT thickness occurs with disorders such as hypertension, insulin resistance, metabolic syndrome, and coronary atherosclerosis In patients with CAD, inflammatory pathways within EFT are activated and EFT secretes more chemokines and cytokines that mediate inflammation. EFT may act as an endocrine organ by secreting various factors in the circulation thus contributing coronary lesion formation.

BAC are correlated with subsequent development of coronary artery calcifications, Kemmeren et al. found that presence of BAC was associated with a 30% and 90% increase in cardiovascular mortality in nondiabetic and diabetic women, respectively. Rotter et al. showed that mammographically detected BAC was associated with an in- creased prevalence of cardiovascular risk factors and cardiovascular morbidity. Presence of BAC are stronger risk factor than other cardiovascular risk factors such as diabetes, hypertension and hyperlipidemia for coronary artery calcification. Recent studies have shown that presence of BAC on mammograms indicates a greater risk for coronary artery disease. As the EFT thickness was positively correlated with BAC and LDL-C levels, risk factors for coronary artery disease, in our study, EFT thickness measurement might play an important role in coronary artery risk stratification for premenopausal women in clinical practice.

Keywords: Breast arterial calcification, epicardial fat tissue, menopause

Table 1

	Study group (n = 80)	Control group (n = 86)	p
Age	44.7 ± 3.7	45.1 ± 3.3	0.36
Height (m)	1.64 ± 0.08	1.65 ± 0.07	0.37
Weight (kg)	74.3 ± 10.7	72.8 ± 9.2	0.33
BMI	27.8 ± 5.1	26.8 ± 4.1	0.16
Smokers, n (%)	15 (18)	18 (20.4)	0.44
Alcohol, n (%)	8 (9.6)	9 (10.2)	0.57
Fasting Glucose (mg/dl)	99.7 ± 10.3	96.9 ± 8.3	0.06
Total Cholesterol (mg/dl)	190.7 ± 36.7	188.3 ± 26.6	0.64
LDL-C (mg/dl)	133.7 ± 25.9	125.1 ± 27.8	0.04
HDL-C (mg/dl)	43.4 ± 9.8	41.8 ± 9.9	0.30
Triglyceride (mg/dl)	157.2 ± 58.9	156.6 ± 59.3	0.94
SBP (mmHg)	131.4 ± 11.6	130.1 ± 18.2	0.59
DBP (mmHg)	81.8 ± 8.7	82.3 ± 8.1	0.72
LVEF (%)	62.7 ± 4.1	63.3 ± 3.5	0.36
EFT thickness (mm)	3.65 ± 0.73	2.94 ± 0.67	0.001

Clinical and biochemical parameters of the patients.

OA-31 INVESTIGATION OF ISCHEMIA MODIFIED ALBUMIN, MALONDIALDEHYDE, SÜPEROXIDE DISMUTAZE AND CATALESE IN PATIENTS WITH NON-ST-ELEVATED MYOCARDIAL INFARCTION (NSTEMI) AND STEMI

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Background: Coronary ischemia may result in myocardial injury and necrosis in line with the duration of ischemia. The diagnosis of ACS is made by co-evaluation of typical chest pain, electrocardiography (ECG) changes, and ischemia markers such as troponin and CK-MB. Increased oxidative stress and decreased antioxidant defense play an essential role in the pathogenesis of cardiovascular diseases. This study aimed to evaluate the IMA (ischemia modified albumin), MDA (malondialdehyde), SOD (superoxide dismutase), and catalase in patients with non-ST elevated myocardial infarction (NSTEMI) and STEMI.

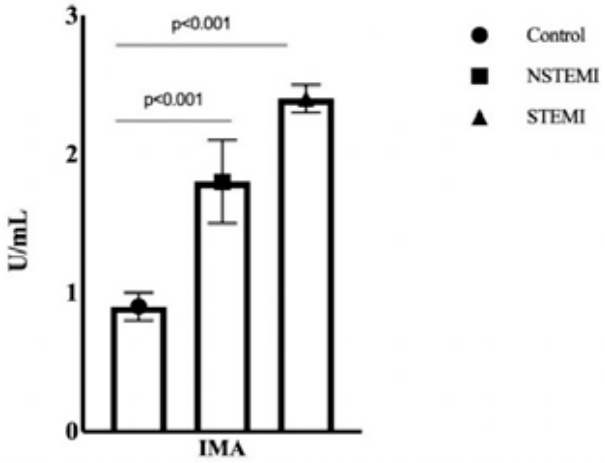
Materials-Method: The present study included 50 patients with STEMI, 55 patients with NSTEMI, and 55 healthy subjects prospectively. All the enrolled patients had ECG within one h of admission. Inclusion criteria were patients recently diagnosed with STEMI or NSTEMI and having typical oppressive chest pain at presentation.
IMA, MDA, SOD, and catalase levels were measure from venous blood obtained from each patient within six h after the onset of symptoms. Significant coronary artery lesions were determined by angiography.

Results: IMA and MDA values were significantly higher in ACS patients compared to the control group ($p < 0.001$). The IMA level in the STEMI group was significantly higher compared to the NSTEMI group (2.4 ± 0.1 vs. 1.8 ± 0.3; $p < 0.001$). Furthermore, MDA levels were significantly higher in the NSTEMI group compared to the STEMI group (3.14 ± 0.06 vs. 2.80 ± 1.10; $p < 0.001$). SOD and catalase levels were observed in the highest control group and the lowest in the NSTEMI group (2.31 ± 0.02, 1.10 ± 0.03, 1.48 ± 0.04; $p < 0.001$). Besides, SOD and catalase levels in the STEMI group were significantly higher than the NSTEMI group. There was a negative and significant correlation between MDA and SOD and catalase levels ($r = -0.771$ $p < 0.001$; $r = -0.821$ $p < 0.001$; respectively).

Conclusion: In conclusion, our data reveal that levels of MDA and IMA levels were increased, and SOD and catalase levels were decreased significantly in patients with STEMI and NSTEMI.

Keywords: STEMI, ischemia modified albumin, malondialdehyde, superoxide dismutase, catalase

Figure 1



LEVELS of ischemia modified albumin (IMA) in NSTEMI, STEMI, and healthy controls

Table-1. The demographic and clinical data of the study population

	Control	NONSTEMI	STEMI	p
Age(years)	46.9±9.3	63.6±12.6a	64.0±14.1a	<0.001
Diabetes mellitus n(%)	14(25)	23(42)	19(45)	0.08
IMA(U/ml)	0.9±0.1	1.8±0.3a	2.4±0.1a,b	<0.001
MDA (µmol/L)	1.49±0.03	3.14±0.06a	2.80±1.10a,b	<0.001
SOD (U/ml)	2.31±0.02	1.10±0.03a	1.48±0.04a,b	<0.001
Catalase (U/ml)	0.54±0.02	0.22±0.02a	0.29±0.01a,b	<0.001
One vessel n(%		35(63)	35(83)	0.03
Two vessels n(%)		12(21)	4(10)	0.16
Three vessels n(%)		8(16)	3(7)	0.17

NSTEMI, non-ST ELEVATED myocardial infarction; STEMI, ST ELEVATED myocardial infarction; IMA, ischemia modified albumin; MDA, malondialdehyde; SOD, superoxide dismutase. a: Control VS. other groups. b: NSTEMI VS. STEMI.

OA-32 RELATIONSHIP BETWEEN HS-CRP LEVELS AND PROGNOSIS IN PATIENT WITH PULMONARY ARTERIAL HYPERTENSIOI

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BACKGROUND AND Aim: Pulmonary arterial hypertension (PAH) is characterized by elevated pulmonary vascular resistance (PVR) leading to right ventricular overload, hypertrophy and dilation, and eventually causing right ventricular failure and death. Some recent studies have shown that inflam- mation has an important role in the pathophysiology of pulmonary arterial hypertension. In this study; We aimed to determine whether there is a re- lationship between serum high sensitivity Creactive protein (hs-CRP) levels that a strong marker of inflammation, and mortality in patients with PAH.

Method: A total of 40 consecutive patients with PAH were evaluated prospectively. Mean age of patients was 64±13 years (12% males, 88% females) with a median follow-up period of 16 months. Optimal cut-off value of hs-CRP to predict mortality was found as 20.3 mg/L, with 89.3% specificity and 66.7% sensitivity.

Results: After follow-up, 12 out of 40 (30%) experienced death. hs-CRP levels were higher among those who died compared to those who survived [12.9 (0.7-105.0) vs. 33.4 (4.1-85.0) mg/L, p=0.008]. Table 1 presents all of the other baseline clinical characteristics of the patients. In the corre- lation analysis, a statistically significant positive correlation was found between hs-CRP with Right ventricle (RV) diameter, inferior vena cava (IVC) diameter, right atrial pressure (RAP), RA area, left atrium (LA) diameter, AST level and Borg dyspnea score. In addition, a statistically significant negative correlation was found between hs-CRP with total protein, 6-minutes walking disance (MWD) and TAPSE. According to univariate analysis; hs-CRP>20.3 mg/L on admission, TAPSE, 6-MWD, Borg dyspnea score, RV diameter, IVC diameter, RA area, right atrial pressure (RAP), total protein and AST level were significantly associated with an increased risk of mortality. In multivariate Cox proportional-hazards model with forward stepwise method; hs-CRP>20.3 mg/L on admission (HR=6.707, 95% CI: 1.825-24.643, p=0.004), and Borg dyspnea score(HR=1.383, 95% CI: 1.083-1.776, p=0.009) remained associated with an increased risk of death.

Conclusions: This was first time in the literature that a study demonstrated that serum hs-CRP levels was associated with an increased the risk of long term mortality, independent of other factors in patients with PAH. It was hypothesized that the relationship between hs-CRP levels and mortality may be associated with increased to inflamatuar pathways but these results should be further supported by extensive prospective studies.

Keywords: hs-CRP, prognosis, pulmonary arterial hypertension

Figure 1. ROC curve of hs-CRP to predict long term mortality

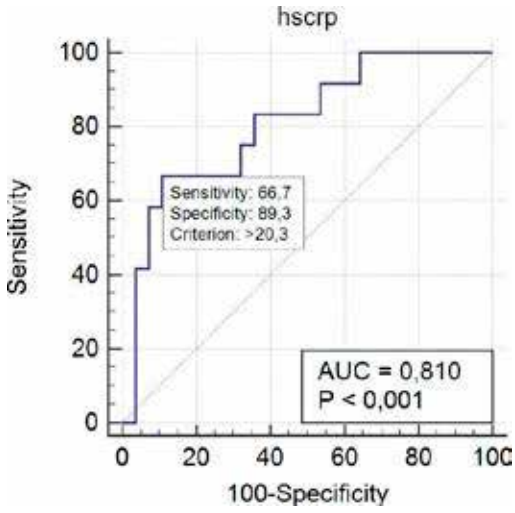

Figure 2. Kaplan–Meier curve for long term mortality

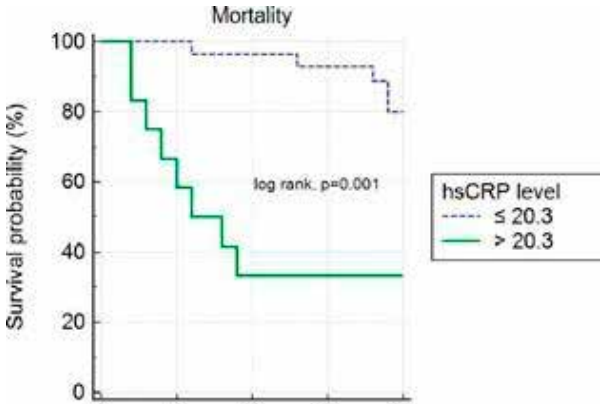

Table 1. Baseline characteristics of study patients

	Patients who survived (n:28)	Patients who died (n:12)	p Value
Baseline characteristics			
Median age (min-max) (years)	60.8 ± 13.5	70.6 ± 9.2	0.028
Sex (female) (%)	23 (82%)	12 (100%)	0.298
Atrial fibrillation, n (%)	16 (57%)	16 (57%)	0.301
Borg dyspnea score	12.8 ± 2.5	16.2 ± 3.0	0.001
6 –Minutes walking distance (m)	297.6 (145 - 480)	164.8 (60 - 445)	<0.001
Echocardiographic parameters			
LV ejection fraction (%)	55.6 ± 3.3	55.4 ± 3.3	0.190
LA diameter (cm)	3.9 ± 0.4	4.0 ± 0.6	0.582
IVC diameter (mm)	15.8 ± 3.8	19.8 ± 4.0	0.004
RV diameter (mm)	49.2 ± 4.2	51.8 ± 2.4	0.047
TAPSE (mm)	19.1 ± 3.0	15.3 ± 3.7	0.001
RA area (cm2)	19.7 ± 3.0	24.3 ± 3.6	<0.001
Cardiac catheterization findings			
Cardiac index (L/min/m2)	3.0 ± 0.5	2.6 ± 0.4	0.034
Mean PAP (mm/Hg)	40.1 (26 - 95)	43.2 (26 - 82)	0.469
RAP (mm/Hg)	8.4 (4 - 18)	11.3 (4 -15)	0.008
Laboratory findings			
Hemoglobin (g/dl)	13.7 ± 1.9	12.8 ± 2.7	0.253
Creatinine (mg/dl)	0.8 ± 0.2	1.1 ± 0.5	0.072
Total protein (mg/dl)	6.7 ± 0.5	5.9 ± 0.7	<0.001
AST (U/l)	19.2 (10 - 48)	33.3 (14-127)	0.009
Sodium (mmol/l)	139.5 ± 3.3	138.7 ± 4.5	0.536
hs-CRP (mg/L)	12.9 (0.7 - 105.0)	33.4 (4.1 - 85.0)	0.008
hs-CRP >20.3 mg/L	3 (11%)	8 (73%)	<0.001

OA-33 SEX-DIFFERENCES IN PATIENTS WITH PERMANENT ATRIAL FIBRILLATION AND HYPERTENSION

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Objective: Atrial fibrillation is a common cardiac disease that increases the risk of mortality and morbidity in male and female patients. Sex differences in atrial fibrillation's epidemiology are not understood sufficiently. We aimed to determine the sex differences in patients with atrial fibrillation and hypertension.

Method: A total of 275 patients with atrial fibrillation and hypertension were classified into two groups by gender. Clinical, biochemical and echocar- diographic parameters were compared between groups. The Kaplan-Meier method was used to demonstrate the timing of events during follow-up and mortality. The mean follow-up time was 21±6 months.

Results: A total of 275 patients with atrial fibrillation and hypertension were included in the study, with a mean age of 71±10 years. Of these patients, 43% were male and 47% were female. 25.5% (n=70) had diabetics, 33.5% (n=92) had coronary artery disease and 17.3% (n=44) heart failure. 26.5% of the patients were taking a single, 39.3% were taking two, and 34.2% were taking three or more antihypertensive drug.

Female patients exhibited a higher level of body mass index (29.7.±4.4 vs 32.7.±6.9, P<0.001); whereas male patients more frequently presented a coronary artery disease (40.7% vs 28%, P=0.019) and heart failure (10.2% vs 22.9%, P=0.004).

Regarding the treatment of patients with atrial fibrillation, using non-dihydropyridine calcium antagonists (10.2% vs 22.9%, P=0.004) and thiazide diuretics (49.2% vs 61.8%, P=0.025) were higher and using statins (25.4% vs 16.6%, P=0.049) was lower in female patients.

As for the echocardiographic parameters of the patients; EF (55±9 vs 58±5, P<0.001), E wave (86±26 vs 102±35, P=0.001), E/e' ratio (12±4 vs 15±7, P=0.002), PASP [30 (24-35) vs 35 (25-45), P=0.001] were higher and left atrium (43±6 vs 41±5.9, P=0.046), left ventricular end diastolic diameter (50±5 vs 48±4, P=0.010), left ventricle mass (217±49 vs 205±42, P=0.046) were lower in female patients.

Regarding the biochemical parameters, hemoglobin (13.5±1.9 vs 12.4±1.5, P<0.001), hematocrit (40.8±5.3 vs 37.6±4.4, P<0.001) and ALT [18 (13-26) vs 15 (12-21), P=0.002] were lower and total cholesterol (176±38 vs 202±46, P<0.001), LDL (111±33 vs 123±38, P=0.012), HDL (44±11 vs 49±10, P< 0.001) were higher in female patients. 11 male and 20 female patients died during the follow up. The Kaplan-Meier method did not show any differences of the mortality between gender (p=0.392).

Conclusion: Female patients with atrial fibrillation and hypertension had higher body mass index and total cholesterol, LDL, HDL levels. Whereas male patients more frequently had a coronary artery disease and heart failure. Awareness of key gender differences is essential for more individualised and effective clinical management in patients with atrial fibrillation and hypertension.

Keywords: Atrial fibrillation, Hypertension, Gender, Sex

Baseline characteristics of patients with atrial fibrillation and hypertension

Characteristic	Male (n=118)	Female (n=157)	P-value
Age (years)	70±9.7	71.1±10.3	0.764
Body mass index (kg/m2)	29.7±4.4	32.7±6.9	<0.001
Coronary Artery disease	48 (40.7%)	44 (28%)	0.019
Diabetes mellitus	31 (26.3%)	39 (24.8%)	0.447
Heart failure	28 (26%)	16 (11%)	0.001
Ejection fraction (%)	55±9	58±5	<0.001
LVEDD (mm)	50±5	48±4	0.010
Left atrium diameter (mm)	43±6	41±5.9	0.046
Right ventricular diameter (mm)	24 (23-26)	24 (22-26)	0.216
PASP (mmHg)	30 (24-35)	35 (25-45)	0.001
E	86±26	102±35	0.001
A	81±20	88±25	0.125
E/A	1±0.4	1.1±0.6	0.302
e'	7 (6-8.3)	7 (6-8)	0.540
E/ e'	12±4	15±7	0.002
LV Mass (gr)	217±49	205±42	0.046
LV Mass Index (gr/m2)	109±24	111±23	0.635
Relative wall thickness	0.46±0.4	0.47±0.8	0.201
Mitral regurgitation	56 (48%)	82 (52%)	0.505
Aortic regurgitation	40 (34%)	69 (44%)	0.055
Aortic stenosis	4 (3%)	13 (8%)	0.249

Dihydropyridine Calcium canal bloker	45 (38.1%)	52 (33.1%)	0.231
Non-dihydropyridine Calcium Channel Blockers (Diltiazem, Verapamil)	12 (10.2%)	36 (22.9%)	0.004
ACE inh or ARB	73 (61.9%)	104 (66.2%)	0.266
B-bloker	58 (49.2%)	78 (49.7%)	0.514
Digoxin	11 (9.3%)	13 (8.3%)	0.462
Doxazosine	7 (5.9%)	5 (3.2%)	0.209
Cordarone	11 (9.3%)	6 (3.8%)	0.053
Thiazide diuretic	58 (49.2%)	97 (61.8%)	0.025
Furosemide	33 (28%)	31 (19.7%)	0.074
Statin	30 (25.4%)	26 (16.6%)	0.049
Antiaggregant	16 (13.6%)	23 (14.6%)	0.390
Oral Anticoagulant	109 (92.4%)	152 (96.8%)	0.084
Hemoglobin (g/dl)	13.5±1.9	12.4±1.5	<0.001
Hematocrit (%)	40.8±5.3	37.6±4.4	<0.001
WBC (/mm3)	6.9 (5.7-8.3)	6.6 (5.6-8.1)	0.254
eGFR (ml/min)	71±18	66±20	0.070
Creatinine (mg/dl)	1.2±0.8	1.04±0.6	0.080
Urea (mg/dl)	44.3±19.4	43.3±16.6	0.677
CRP (mg/dl)	4.4 (3.3-5.7)	4 (3.3-5.3)	0.140
Glucose (mg/dl)	120±52	126±59	0.383
HbA1c (%)	6.4±1.4	6.5±1.5	0.519
Total Cholesterol (mg/dl)	176±38	202±46	<0.001
LDL Cholesterol (mg/dl)	111±33	123±38	0.012
HDL Cholesterol (mg/dl)	44±11	49±10	<0.001
Triglyceride (mg/dl)	144±106	155±115	0.422
AST (U/L)	26±16	23±11	0.104
ALT (U/L)	18 (13-26)	15 (12-21)	0.002

PASP: Pulmonary artery systolic pressure, AST: Aspartate transaminase, ALT: Alanine transaminase, WBC: White blood cell count, LVEDD: Left VENTRICULAR end diastolic diameter, eGFR: Estimated glomerular filtration rate. ACE: ANGIOTENSIN-CONVERTING enzyme inhibitors, Angiotensin II receptor blockers

OA-34 DOES THE CHOICE OF NOAC IN ATRIAL FIBRILLATION AFFECT THE CHANGE IN GLOMERULAR FILTRATION RATE IN LONG-TERM FOLLOW-UP?

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Objective: Atrial fibrillation (AF) is a frequent arrhythmia in cardiology practice and oral anticoagulant therapy is the only proven therapy related to decreased mortality and morbidity. Oral vitamin K antagonist, warfarin, is known with its negative effects on renal functions, hence non-vitamin K oral anticoagulant (NOAC) agents perform better outcomes in this specific issue. In the present study we aimed to compare the renal effects of NOAC's in long term follow-up of a closed cohort.

Methods: The outpatient data of Izmir Kemalpasa State Hospital's cardiology clinic is reviewed for the first six months of 2018 retrospectively. Pati- ents with the AF diagnosis and on NOAC therapy, who have visited the clinic at least twice with documented renal function, are included to the study. Instead of serum creatine, glomerular filtration rate (GFR) calculated by Cockcroft-Gault method is used to define renal function. Patients with chronic kidney disease on renal replacement therapy are excluded.

Results: The study group consists of 105 patients and the demographics are given in table 1. The mean follow-up duration was 2.5±1.2 years. Beca- use of low number of patients on dabigatran (n=5) and edoxaban (n=2), these patients excluded from comperative analyses. The GFR has decreased from 62.63± 18.36 ml/min to 56.38±16.53 ml/min in rivaroxaban group (n=77) and from 55.47±19.65 ml/min to 53.09±14.83 ml/min in apixaban (n=21) group. The change in GFR (-6.24±12.71 ml/min in rivaroxaban and -2.38±12.73 ml/min in apixaban group) was not statistically significant between groups (p=0.339).

Conclusion: A decrease in renal function is expected because of aging especially in high-risk groups. Our findings suggest that the renal effects of rivaroxaban and apixaban are similar. Because of the limited number of patients and retrospective single-center design, further studies are needed.

Keywords: Atrial fibrillation, glomerular filtration rate, rivaroxaban, apixaban

Patient demographics

	n	Mean ±SD
Age (years)	105	72.08±9.14
CHA2DS2	105	3.37±1.56
CHA2DS2 VASc	105	4.77±1.42
Systolic BP (mmHg)	105	144.23±25.16
Diastolic BP (mmHg)	105	84.5 ±13.11
Heart rate (bpm)	105	85.9 ±42.14
LVEF (%)	105	51.83±3.14
SPAP (mmHg)	105	40.53±7.39
Haemoglobin (g/dl)	105	12.68±1.77
Fasting glucose (mg/dl)	105	114.52±35.47
HDL (mg/dl)	105	51.34±14.19
LDL (mg/dl)	105	100.02±31.12
TG (mg/dl)	105	128.82±71.38
Urea (mg/dl)	105	42.56±14.65
Creatine (mg/dl)	105	1.14±0.26
Na (mmol/L)	105	140.57±6.2
K (mmol/L)	105	4.46±0.41
Uric ascide (mg/dl)	105	7.08±2.03
Initial GFR (ml/min)	105	61.82±6.57
Last GFR (ml/min)	105	57.71±16.25
TSH (mU/L)	105	1.79±1.46
Follow-up Duration (Years)	105	2.53±1.21

OA-36 RELATIVE FAT MASS INDEX IS MORE USEFULL FOR PREDICTING CORONARY ARTERY DISEASE SEVERITY CALCULATED WITH GENSINI SCORE THAN BODY MASS INDEX

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Background: coronary artery diseases continue to be seen increasingly in the society every day. The relationship between patients' body measurement parameters and obesity markers with coronary artery diseases severity are known with contradictory results. RFM (Relative fat mass) is a new para- meter to calculate body fat ınstead of BMI (Body mass ındex). RFM is calculated by height, waist circumference, and gender, regardless of weight. In our study, we tried to show the relationship of the prevalence of coronary artery disease calculated by gensini score by using the RFM parameter.

Methods: Our study population consists of 186 coronary artery disease patients admitted to out patient clinic with stable anjina pectoris. We performed stress electrocardiography for diagnosis of ischemic heart disease. patients antropological measuremnts were done before coronary angiography. Patients went to coronary angiography and coronary artery disease severity was calculated by gensini score.

Results: Patients divided into three groups according to gensini score distribution of study population. Between groups there were not statistically difference between hypertention, hemoglobine, trigliseride, LDL, BFP (Body fat percentage) and BMI (P>0.05). But there was a statistically difference between age, diabetes mellitus, smoke height, weight and RFM measurements between groups (p<0.05). Altough there was not correlation with BMI, there was an moderate correlation between RFM with severity of coronary artery disease (r: 0.668). Age, diabetes mellitus, smoke and RFM are found the predictors of coronary artery disease severity in the univariate analysis in multivarite analysis only DM found to be related to coronary artery disease severity (odds ratio, OR: 2.402, 95% confidance interval (CI) 0.047-0.475, p:0.017)

Conclusions: RFM is a new parameter to detect body fat and obesity, for predicting coronary artery disease severity and risc stratification it could be more usefull parameter than BMI in Daily practice in outpatient clinics.

Keywords: relative fat mass, body mass index, coronary artery disease severity

Table 1

	Group 1 (n:96)	Group 2 (n: 50)	Group 3 (n:40)	p value
Age	60.89±12.37	63.36±10.37	67.73±11.26	0.018
sex (% male)	48	44	50	0.086
diabetes mellitus (n)	36	28	19	0.015
hypertention (n)	52	31	16	0.843
smoke (n)	36	18	18	0.020
hemoglobine	12.23±1.76	12.86±2.22	12.15±2.0	0.080
creatine	0.95±0.77	0.93±0.40	0.98±0.44	0.942
triglyseride	156.72±85.13	167.98±95.14	158.2±101.09	0.756
LDL	121.54±42.69	120.75±42.69	116.65±41.57	0.858
height (cm)	167.9±7.78	165.4±8.51	160.7±9.23	<0.001
weight (cm)	82.97±14.53	81.76±13.17	75.53±12.95	0.038
waist (cm)	99.17±12.27	96.53±12.87	96.40±11.97	0.341
hip (cm)	97.64±12.26	98.20±11.92	102.33±15.45	0.202
body fat percentage (BFP)	38.56±6.91	37.5±8.02	38.33±6.94	0.681
body mass index (BMI)	29.5±5.36	30.18±5.51	29.19±4.26	0.644
relative fat mass (RFM)	32.81±7.57	35.27±8.53	36.59±7.14	0.032

patients baseline demographic, laboratory and anthropological parameters

OA-39 EVALUATION OF EPICARDIAL ADIPOSE TISSUE BY ECHOCARDIOGRAPHY AND ITS CORRELATION WITH AORTIC VELOCITY PROPAGATION AND CAROTID INTIMA-MEDIA THICKNESS IN PATIENTS OF TYPE 2 DIABETES MELLITUS

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Background: Epicardial fat thickness (EFT) is associated with aortic stiffness in diabetic patients. In this study, we aimed to determine if there is an association among the parameters of EFT, aortic velocity propagation (AVP), and carotid intima-media thickness (CIMT) in patients with non-insulin dependent diabetes mellitus (NIDDM).

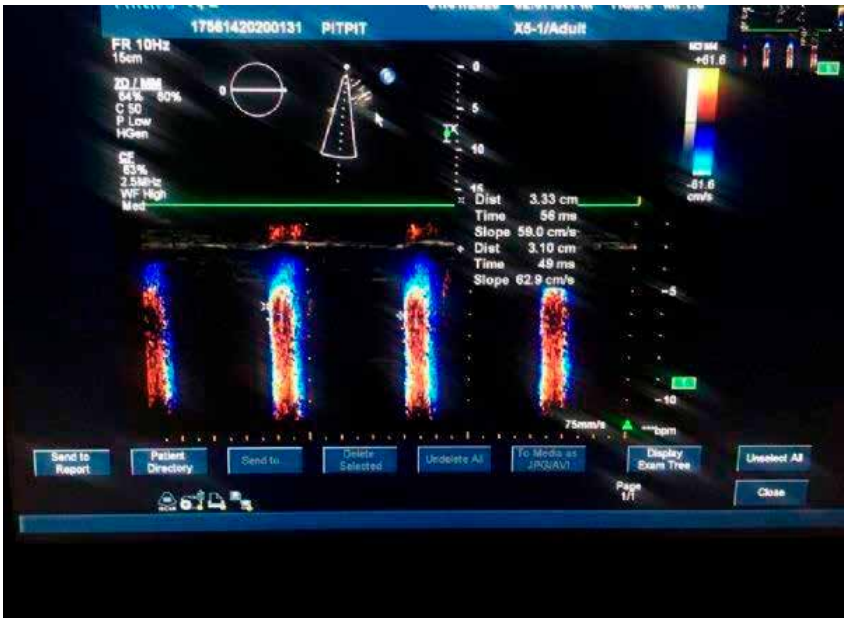
Materials-Methods: This study included 55 NIDDM patients and 40 non-diabetic control patients. For all participants, EFT and AVP were determined by echocardiographic method and CIMT was calculated using an ultrasonographic exam.

Results: The EFT and CIMT values were found to be significantly increased in the non-insulin dependent diabetes mellitus group. On the other hand, aortic velocity propagation was decreased in the non-insulin dependent diabetes mellitus group compared to non-diabetic patients (EFT; 8.43 ± 1.68 versus 6.36 ± 2.21 mm, $P < 0.001$; CIMT; 0.92 ± 0.24 versus 0.58 ± 0.18 mm, $P < 0.001$; and AVP;28.20 ± 16.02 versus 58.10 ± 17.50, P < 0.01,
respectively).

Conclusion: Significantly higher EFT and CIMT values were found in addition to lower AVP values in non-insulin dependent diabetes mellitus patients. Moreover, we demonstrated that there was a strong correlation between EFT, CIMT, and AVP.

Keywords: Epicardial fat thickness, Aortic velocity propagation, Type 2 diabetes mellitus

APV



APV-Echocardiographic measure.

Table 1

	Diabetes mellitus (n=50)	Control (n=45)	p
Age (years)	58.8±8.8	47.3±8.8	<0.01
Male %(n)	36(20)	40(55)	0.07
Hypertension %(n)	60(33)	27(11)	<0.01
Serum glucose (mg/dl)	183.2±42.1	94.1±13.3	<0.01
Creatinine (mg/dl)	1.0±0.1	0.8±0.2	<0.01
Ejection Fraction (%)	59.8±1.5	61.0±1.9	<0.01
CIMT (mm)	0.9±0.2	0.5±0.1	<0.01
EFT (mm)	8.4±1.6	6.3±2.2	<0.01
AVP (cm/s)	28.2±16.0	58.1±17.5	<0.01

Baseline demographic features, laboratory parameters and echocardiography parameters of the study population.

OA-40 DETERMINANTS OF SPONTANEOUS ECHO CONTRAST IN MITRAL VALVE REPLACEMENT PATIENTS

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Introduction: Patients with mechanical heart valves, especially at mitral site, are at increased risk of thrombosis. Spontaneous echo contrast (SEC), also known as 'smoke', is shown to be associated with hypercoagulable state. We searched for the factors associated with the SEC at transthorasic echocardiography (TTE) at routine control of mitral valve replacement (MVR) patients.

Methods:: We consecutively recruited 68 mechanical MVR patients admitted for routine INR check. Echocardiography control was done on the day of INR control, if the patient was elligible for the study. Patients having their last 5 routine INR control at time interval between 2-8 weeks at our centre, without any hospitalization or a need to stop drug for bleeding or intervention were elligible for our study. Patients with valves other than mitral site, end stage renal failure, known hematological disease, valvular thrombus or severe valvular dysfunction (stenosis or regurgitation) on ec- hocardiography, dual antiplatelet users and patients with acute thrombotic conditions were excluded. Time in therapeutic range (TTR) was calculated by traditional method, as the percentage of INRs in therapeutic range. Goal INR range was set as 2.5-3.5, as recommended by the guidelines. INR level<2.5 was marked as non-therapeutic.

Results: Overall 32% of the MVR patients had SEC on their TTE. Mean age of the study population was 64±11 years with 56% female population. Current smoking, low glomerular filtration rate (GFR) and patients with reduced EF heart failure significantly had SEC on their TTE (p=0.05, p=0.05 and p=0.02, respectively). Large left atrium size was significantly associated with SEC (p=0.003), whereas mitral regurgitation was significantly protecting from SEC (p=0.04) (Table-1). In logistic regression analysis large left atrium size and low GFR were independent predictors of SEC at TTE (p=0.028 OR: 3.479 (1.144-10.586) and p= 0.041 OR: 0.974 (0.949-0.999), respectively)

Conclusion: Patients with MVR are the group with high risk of thromboembolic diseases and SEC at TTE is known to be an indicator of increased risk. Anticoagulation intensity was not associated with occurence of SEC, however, large left atrium size and low GFR were independent risk factors in our analysis. Although our trial was performed in a limited number of selected patients, we believe understanding of the high risk factors for embolic complications may help improving additive care and follow up for this patient population.

Keywords: mitral valve replacement, spontaneous echo contrast, transthorasic echocardiography, risk factors

Table-1

	SEC (+) (n=22)	SEC (-) (n=46)	P value
Age, year mean±SD	62 ± 12	65 ± 11	0.25
Women, n (%)	10 (45%)	28 (61%)	0.23
Body mass index (kg/m2), mean±SD	30 ± 6	29 ± 7	0.79
Hypertension, n (%)	15 (68%)	31(67%)	0.95
Diabetes mellitus, n (%)	8 (36%)	18 (39%)	0.82
Current smoking, n (%)	8 (36%)	7 (15%)	0.05
Time from MVR operation (years), mean±SD	5.3 ± 4.3	5.1± 4.4	0.86
Atrial fibrillation, n (%)	13 (59%)	22 (48%)	0.38
Atherosclerotic heart disease, n (%)	5 (22%)	10 (21%)	0.92
Platelet at admission (10x9/L), mean±SD	270 ± 93	251 ± 112	0.49
Mean platelet volume, (fL), mean±SD	30.5 ± 37.4	22.9 ± 24.6	0.31
GFR (ml/min/1.73 m2), mean±SD	56 ± 22	69 ± 26	0.05
Ineffective INR at the TTE control day, n (%)	7 (32%)	9 (19%)	0.26
TTR, mean±SD	0.60 ± 0.21	0.66 ± 0.18	0.24
Medications used at admission:			
Statin, n (%)	9 (41%)	22(48%)	0.59
ASA use, n (%)	4 (18%)	9 (19%)	0.89
Echocardiographic parameters:			
Mitral regurgitation (grade/4), mean±SD	0.59 ± 0.53	1.17 ± 0.91	0.04
Left atrium diameter (cm), mean±SD	5.4 ± 0.7	4.9 ± 0.9	0.003
Heart failure with reduced EF (<40%), n (%)	11 (50%)	10 (21%)	0.02

Baseline clinical characteristics of study patients.. (ABBREVIATIONS: GFR: Glomerular filtration rate, TTR: Time in therapeutic range, INR: International normalized ratio, ASA: Acetylsalycilic acid, EF: Ejection fraction, TTE: Transthorasic echocardiography, MVR: Mitral VALVE replacement. SD: Standart DEVIATION, SEC: Spontaneous echo contrast)

OA-41 THE EFFECT OF SLEEVE GASTRECTOMY ON CAROTID İNTIMA-MEDIA THICKNESS AND EPICARDIAL FAT TISSUE THICKNESS

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Objective: Cardiovascular diseases (CVD) is one of the leading causes of mortality in obese patients. In this study, we investigated the effects of laparoscopic sleeve gastrectomy (LSG) operation on carotid intima media thickness (CIMT), epicardial fat thickness (EFT), which are independent predictors of subclinical atherosclerosis.

Material-Method: A total of 57 patients (35 females and 22 males) with a mean age of 42 ± 10.34 with standard indication for LSG were prospecti- vely included in the study. In B mode duplex ultrasound; mean CIMT values, standard transthoracic 2D echocardiography, EFT measurements, and serum endocan levels were measured before and 6 months after the operation. Delta (D) values were obtained by subtracting sixth month values from baseline values.

Results: Body mass index (BMI) decreased significantly from 46.31 ± 5.10 to 36.25 ± 4.61 kg / m2 (p <0.001) in the sixth month after LSG. EFT, CIMT values decreased significantly in the sixth month after surgery (0.57 ± 0.15 vs 0.50 ± 0.14 mm; p <0.001 and 1.007 ± 0.05 vs 0.99 ± 0.13 mm; p <0.001).(Table1,Figure1) While there was a positive to medium level relationship between D-BMI and EFT and CIMT (r:0,387; p:0,008and r:0.313;p:0.024respectively). We also found a positive weak correlation between D-EFT and D-CIMT (r:0.222; p:0.045).

Conclusion: LSG, which reflects early structural atherosclerotic changes in patients with asymptomatic severe obesity, can improve the risk of cardi- ovascular disease by providing improvements on CIMT, EFT values.

Keywords: Laparoskopik sleeve gastrektomi, Carotid intima mediathickness, Epicardial fat thickness, Atherosclerosis

Figure 1

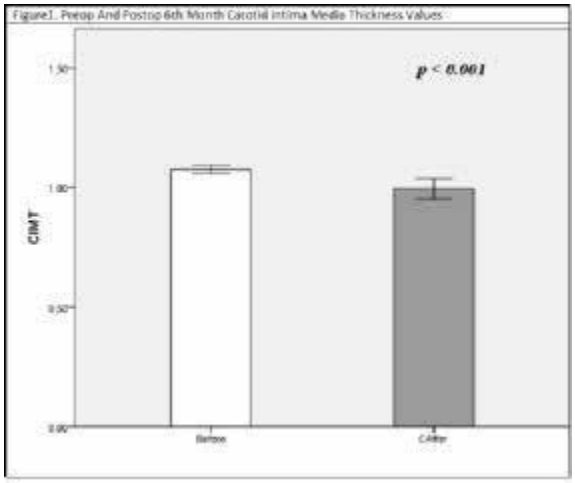

Figure1. Preop And Postop 6th Month Carotid Intima Media Thickness Values

Table 1

Table 1 Changes in biochemical values, clinical, anthropometric and echocardiographic measurements after laparoscopic sleeve gastrectomy.

	Baseline	Post-op (6. Months)	P
Weight (kg)	125.45±21.34	100.68± 19.26	<0.001
BMI (kg/m2)	46.31±5.10	36.25±4.61	<0.001
Systolic BP (mmHg)	136.23±15.35	120.11±13.20	<0.001
Diastolic BP (mmHg)	80.70±8.86	74.32±8.09	<0.001
Heart rate	81.34±14.01	79.32±12.54	0.003
FPI (mU/ml)	102.64±27.68	98.15±45.66	0.881
Total-C	193.26±33.21	165.60±26.12	<0.001
HDL-C (mg/dl)	36.62±12.70	42.06±10.40	<0.001
LDL-C (mg/dl)	106.41±26.76	90.28±16.37	<0.001
Triglyceride (mg/dl)	230.35±74.44	160.94±55.91	<0.001
Kreatinin	0.69±0.15	0.68±0.17	0.196
Urea	21.66±6.21	22.66±8.02	0.561
ALT	21.85±9.01	16.29±6.40	<0.001
Left atrium (cm)	3.48±0.48	3.47±0.47	0.060
End systolic diameter (cm)	3.35±0.21	3.34±0.25	0.646
End diastolic diameter (cm)	4.78±0.20	4.80±0.19	0.699
Right atrium (cm)	2.16±0.07	2.15±0.03	0.576
Septum (cm)	1.10±0.15	1.08±0.12	0.075
Posterior wall (cm)	0.78±0.15	0.78±0.14	0.789
Ejection fraction (%)	62.46±2.52	62.51±2.51	0.543
EFT (mm)	0.57±0.15	0.50±0.14	<0.001
CIMT (mm)	1.007±0.05	0.99±0.13	<0.001

BMI, body mass index; CIMT, carotid artery intima-media thickness; FBG, fasting blood glucose; HDL-C, high density lipoprotein cholesterol; LDL-C, low density lipoprotein cholesterol; LVEF, left ventricular ejection fraction; TC, total cholesterol; TG, triglyceride.

Table 1 Changes in biochemical VALUES, clinical, anthropometric and echocardiographic measurements after laparoscopic SLEEVE gastrectomy.

OA-42 THE NEW TOOL FOR EVALUATION OF DIASTOLIC FUNCTION: THE E AND A STRAIN ANGLE AND E TO A STRAIN ANGLE RATIO OF DIASTOLIC GLOBAL LONGITUDINAL STRAIN CURVE

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Background: Left ventricle (LV) diastolic function is evaluated by indirect parameters obtained by mitral valve (MV) inflow, pulmonary vein flow and LV mitral/annular tissue Doppler imaging (TDI) parameters. None of these parameters are obtained directly from the LV myocardium. Hence, we are thought that it is possible to evaluate by direct parameters such as E and A strain (ε) angle (EεA, AεA) optioned LV myocardium by speckle tracking echocardiography (STE). Therefore, in this study, we aimed to compare whether there is a correlation between EεA, AεA angle and Eε/Aε angle ratio (E/AεAR) and mitral MV pulse wave Doppler (PWD) and TDI parameters in patients with LV diastolic function (DF).

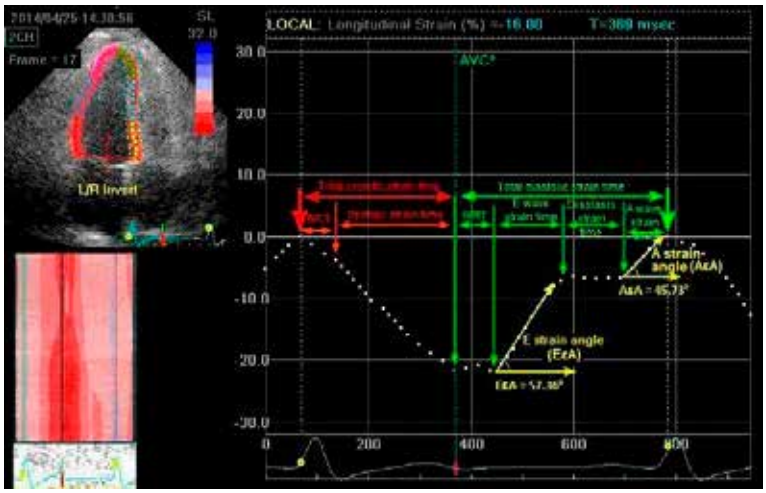
Methods: One hundred and fourteen patients with sinus rhythm were included in the study (Table 1). Conventional pulse wave Doppler [mitral valve (MV) inflow E and A peak velocity, E/A ratio (E/AR), deceleration time (DT), deceleration slop (DS)], tissue Doppler imaging echocardiography [Septal é (Sé), E/Septal é ratio (E/SéR)] and strain angel parameters (EεA, AεA, Eε/AεAR) obtained from diastolic strain curve from LV wall in apical 2, 4 and 5 apical chamber views (ACV) were compared. The EεA and AεA were defined as the angle between the Eε and Aε curve and the X-axis on the LV diastolic strain curve, respectively (Figure 1).

Results: The mean age in the study population was 51.86±13.87 (min-max: 19-89) years. No statistically significant difference was found between the mean of E/AR and Eε/AεAR measured from left ventricle on the A2CV, A4CV and A5CV (p=.158, p=.830, p=.215 respectively) (Table 1). However, a significantly positive strong correlation was found between Eε/AεAR and E/AR, E/SéR on all views (r =.620, p <.001; r =.548, p <. 001; r =.570, p <.001 and r = -.431, p <.001; r = -.279, p =.003; r = -.255, p =.008, respectively) (Table 1, Figure 2). Also, a significantly positive correlation was found between the EεA and E velocity, E/AR and DS on most of ACVs, and a significantly negative correlation was found between AεA and E velocity, E/AR and DS on A2CV and A5CV except for A4CV.

Conclusion: The EεA, AεA and Eε/AεAR are a simple, repeatable, useful and new tool for evaluation of DF, and they can use alone or together PWD and TVD diastolic parameters for the evaluation of DF.

Keywords: Diastolic function, Eε and Aε angle, Eε and Aε angle ratio

Figure 1. Schematic illustration of the E and A strain angle on the strain curve formed during a cardiac cycle.



AεA: A strain angle, EεA: E strain angle, IVCT: Isovolumetric contraction time, IVRT: Isovolumetric contraction time

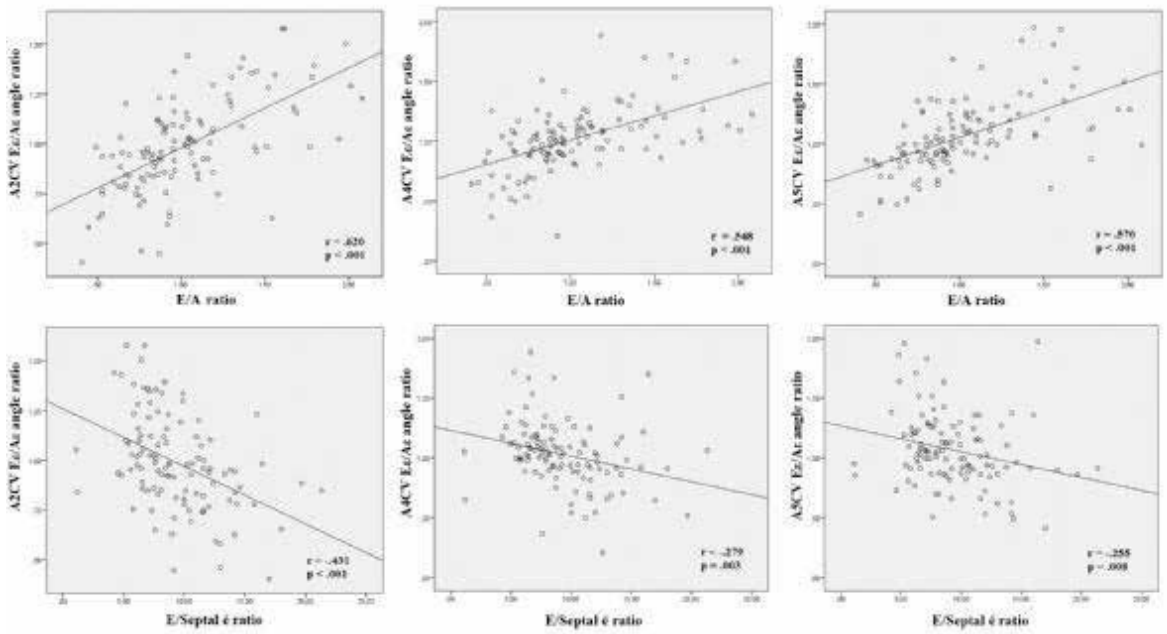
Table 1. Comparison of E/AR and Eε/AεAR values by Paired-Samples-T test and the r and p-values of correlation between Eε, Aε angle, Eε/AεAR and mitral valve inflow peak E velocity, peak A velocity, E/AR, DT, DS and E/SéR.

	Paired Differences (n:114)					Paired Samples Statistics (n:114)		
				95% CI of the Difference				
Echocardiographic Windows	Mean ± SD	SD Error Mean	t	Lower	Upper	E/AR (Mean ± SD)	Eε/AεAR (Mean ± SD)	p
A2CV	.0380±.2860	.0268	1.420	-.0150	.0911	1.028±.364	.990±.022	.158
A4CV	.0063±.3125	.0293	.216	-.0517	.0643	1.028±.364	1.021±.025	.830
A5CV	-.0365±.3125	.0293	-1.248	-.0945	.0215	1.028±.364	1.064±.028	.215
Correlation								

Echocardiographic Windows			E Velocity	A Velocity	E/A Ratio	DT	DS	E/SéR
A2CV	Eε Angle	r	.381	-.341	.502	-.132	.250	-.340
		p	<.001	<.001	<.001	.166	.008	<.001
	Aε Angle	r	-.288	.112	-.292	.182	-.251	.225
		p	.002	.241	.002	.055	.008	.019
	Eε/AεAR	r	.507	-.365	.620	-.207	.364	-.431
		p	<.001	<.001	<.001	.028	<.001	<.001
A4CV	Eε Angle	r	.370	-.274	.446	-.128	.227	-.323
		p	<.001	.004	<.001	.185	.018	.001
	Aε Angle	r	-.116	.202	-.234	.046	-.101	.005
		p	.232	.035	.013	.636	.296	.958
	Eε/AεAR	r	.410	-.385	.548	-.171	.306	-.279
		p	<.001	<.001	<.001	.072	.001	.003
A5CV	Eε Angle	r	.428	-.331	.530	-.140	.252	-.197
		p	<.001	<.001	<.001	.150	.009	.046
	Aε Angle	r	-.252	-.004	-.170	.181	-.258	.103
		p	.009	.970	.076	.061	.007	.301
	Eε/AεAR	r	.534	-.307	.570	-.268	.416	-.255
		p	<.001	.001	<.001	.004	<.001	.008

A: Mitral VALVE inflow peak A VELOCITY, Aε: A strain, DS: Mitral VALVE deceleration slope, DT: Mitral VALVE inflow deceleration time, E/AR: Mitral VALVE inflow peak E to peak A ratio, E/SéR: Mitral VALVE inflow peak E to septal é VELOCITY ratio, E: mitral VALVE inflow peak E VELOCITY, Eε/AεAR: E strain angle to A strain angle ratio, Eε: E strain

Figure 2. Correlation graphics between the Eε/Aε angle retio (Eε/AεAR) obtained on A2CV, A4CV and A5CV during LV diastole by the speckle tracing echocardiography technique and other diastolic parameters.



OA-43 COMPARISON BETWEEN PERCUTANEOUS AND SURGICAL FEMORAL ACCESS FOR ENDOVASCULAR AORTIC REPAIR IN PATIENTS WITH TYPE III AORTIC DISSECTION

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Background: Aortic dissections are cardiovascular events with high mortality and morbidity rates. Management might be either with medical or in- terventional approach. Recently, thoracic endovascular intervention (TEVAR) becomes the first treatment of choice because of its better results and lower rates of complications in patients with type III aortic dissections. The intervention might be performed via femoral artery either with percuta- neous or surgical approach. Because of large sheath insertion to femoral artery, Pre-close technique is described in literature. The aim of this study was to investigate and compare outcomes and safety of 'Pre-close technique' to surgical approach in patients with type III aortic dissections who underwent TEVAR with femoral access >=22F.

Methods: A total of 96 patients whom had type III aortic dissection and was performed TEVAR were retrospectively included in the study. 56 patients had TEVAR with percutaneous approach and these patients named as P-TEVAR group, 40 patients had TEVAR with surgical approach and these patients named as S-TEVAR group. Pre- and post-procedural data with complications and procedural data during TEVAR were evaluated for both groups and compared in between.

Results: The main finding was that there was no significant difference between S-TEVAR and P-TEVAR groups in terms of complications and tech- nical success. Operating room time was significantly decreased in P-TEVAR group. (P < 0.001) Overall success rate for femoral approach in patients with Pre-close technique was 94.6% and was 100% for surgical approach. P-TEVAR group had post-operative complications in 3 patients and S-TEVAR group had in 4 patients.

Conclusions: Total percutaneous approach with Pre-close technique using Pro-Glide device is a safe and feasible method of femoral access in pati- ents with type III aortic dissections.

Keywords: Percutaneous closure, TEVAR, Aortic dissection, Vascular Closure Device

Figure 1

	P-TEVAR	S-TEVAR	P value
Operating room time (min)	104.3 ± 13.8	160 ± 25.4	**<0.001**
Hospital length of stay (days)	9.09 ± 4.74	10.06 ± 4.96	0.253
Manual compression time (min)	8.16 ± 2.41	-	
Technical success	53 (94.6%)	40 (100.0%)	0.263
Complications	3 (5.4%)	4 (10.0%)	0.446
Complications			
Groin infection	0	1 (2.5%)	
Pseudoaneurysm	1 (1.8%)	0	0.669
Hematoma / seroma	2 (3.6%)	3 (7.5%)	

P-TEVAR, percutaneous thoracic endovascular aortic repair; S-TEVAR, surgical thoracic endovascular aortic repair.

Procedural data, clinical outcomes and procedural complications

OA-45 A SINGLE CENTRE EXPERIENCE OF VASCULAR COMPLICATIONS USING SUTURE-BASED VASCULAR CLOSURE DEVICES AFTER TRANSFEMORAL TRANSCATHETER AORTIC VALVE IMPLANTATION

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Objectives: Access site complications of vascular closure devices in transfemoral (TF) transcatheter aortic valve implantation (TAVI) are associated with increased morbidity and mortality; however, their incidence and predictors are conflicting between studies. This study sought to assess the incidence and predictors of vascular access site complications in patients undergoing TF TAVI.

Methods: A total of 202 patients undergoing TF TAVI were included in the study. Minimum iliofemoral diameter and iliofemoral calcium score (CS), tortuosity score (TS) were estimated from contrast-enhanced multidetector computed tomography imaging. The baseline, procedural characteristics and all outcomes (defined according toVARC-2 criteria) were retrospectively compared.

Results: Baseline characteristics and comorbidities of the transfemoral patients are presented in Table 1. Forty patients presented access site comp- lications (7.9% major, 11.8% minor), most of which were stenosis/ occlusion (7.9%), local bleeding or hematoma (5.4%), closure device failure (2%), rupture (2%), pseudoaneurysm (1%) (Table 2). Endovascular treatment was used in 19 patients (9.4%) Primary surgical repair for access site complications was necessary in 10/202 (4.9%) patients due to failure of vascular closure devices, peripheral artery occlusion/stenosis, and delivery sheath breakage. Hospital mortality was 16 (7.9%) for the overall cohort. In a multivariate logistic regression analysis that included sheath- to-iliofemoral artery ratio (SIFAR) (the ratio between the sheath outer diameter and minimum iliofemoral diameter), iliofemoral CS, and TS; SIFAR was the only the sole independent predictor of major access site complications (hazard ratio 30.2, confidence interval [CI] 95% 2.2-409, p=0.01). The SIFAR threshold with the highest sum of sensitivity (68%) and specificity (56%) for access site complications was 0.97 (area under the curve 0.65, 95% CI: 0.49-0.8, p=0.046).

Conclusions: Vascular access site complications are frequent in patients undergoing TF TAVI. SIFAR was the only independent predictor of major access site complications and should be evaluated preceding TAVI.

Keywords: vascular closuer device, TAVI, Proglide

Table 1

Table 1 Baseline Patient Characteristics

	Patients without VC (n=162)	Patients with VC (n=40)	p
Age (years)	79.4±7.7	78±7.1	0.29
Men	89(54.9%)	17(42.5%)	0.16
logEuroScore	25.6±3.8	26.8±4.4	0.07
NYHA III-IV	88(54.3%)	19(48.3%)	0.77
BMI	25.8±3.2	25.9±3.9	0.9
Hypertension	147(81.2%)	34(85%)	0.29
Diabetes	36(22.2%)	7(17.5%)	0.51
CAD	92(56.8%)	23(57.5%)	0.9
PAD	31(19.1%)	12(30%)	0.13
Previous MI	46(28%)	8(20%)	0.28
Previous SVO	7(4.3%)	4(10%)	0.23
Previous PCI	44(27.2%)	9(22.5%)	0.54
CABG	29(17.9%)	9(22.5%)	0.5
AF	39(24.2%)	9(22.5%)	0.82
Tortuosity Score	1.4±0.97	1.48±0.93	0.64
Calcification score	1.33±0.81	1.5±0.96	0.26
SIFAR	0.95±0.1	1.0±0.23	0.07

VC, vascular complication; CAD, coronary artery disease; SVO, cerebrovascular occlusion; PAD, peripheral artery disease; COPD, chronic obstructive pulmonary disease; AF, atrial fibrillation; CABG, coronary artery bypass grafting, BMI, Body mass index; MI, myocardial infarction

Baseline characteristics

Table 2

Table 2 Vascular site complications

	Total vascular complication (n=40)	Major vascular complication (n=16)	Minor vascular complication (n=24)
Bleeding/Hematoma	11(27.5%)	3	8
Aortic Dissection	1(2.5%)	1	-
Rupture	4(10%)	4	-
Stenosis/occlusion	16(40%)	3	13
Pseudoaneurysm	2 (5%)	1	1
Closure device failure	4(10%)	2	2
Annular rupture	1(2.5%)	1	-
Sheath breakage	1(2.5%)	1	-

Vascular complications

OA-46 EFFICACY AND SAFETY OF ANGIO-SEALTM VIP VASCULAR CLOSURE DEVICE COMPARED TO MANUAL COMPRESSION FOR ACCESS SITE HEMOSTASIS IN PATIENTS WHO UNDERWENT ANTEGRADE COMMON FEMORAL ARTERY PUNCTURE FOR POPLITEAL AND/OR BELOW THE KNEE INTERVENTION

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Tepecik Training and Research Hospital

Objective: Antegrade common femoral artery puncture has been the more preferred way for popliteal and/or below the knee interventions. While manual compression has been the conventional method for access site hemostasis, vascular closure devices have been increasingly being used with the aim of a shorter hospital stay and a better patient comfort. Our aim was to evaluate the efficacy and safety of Angio-SealTM VIP vascular closure device compared to manual compression for access site sealing in patients with popliteal and/or below the knee disease who were treated via antegrade common femoral artery puncture.

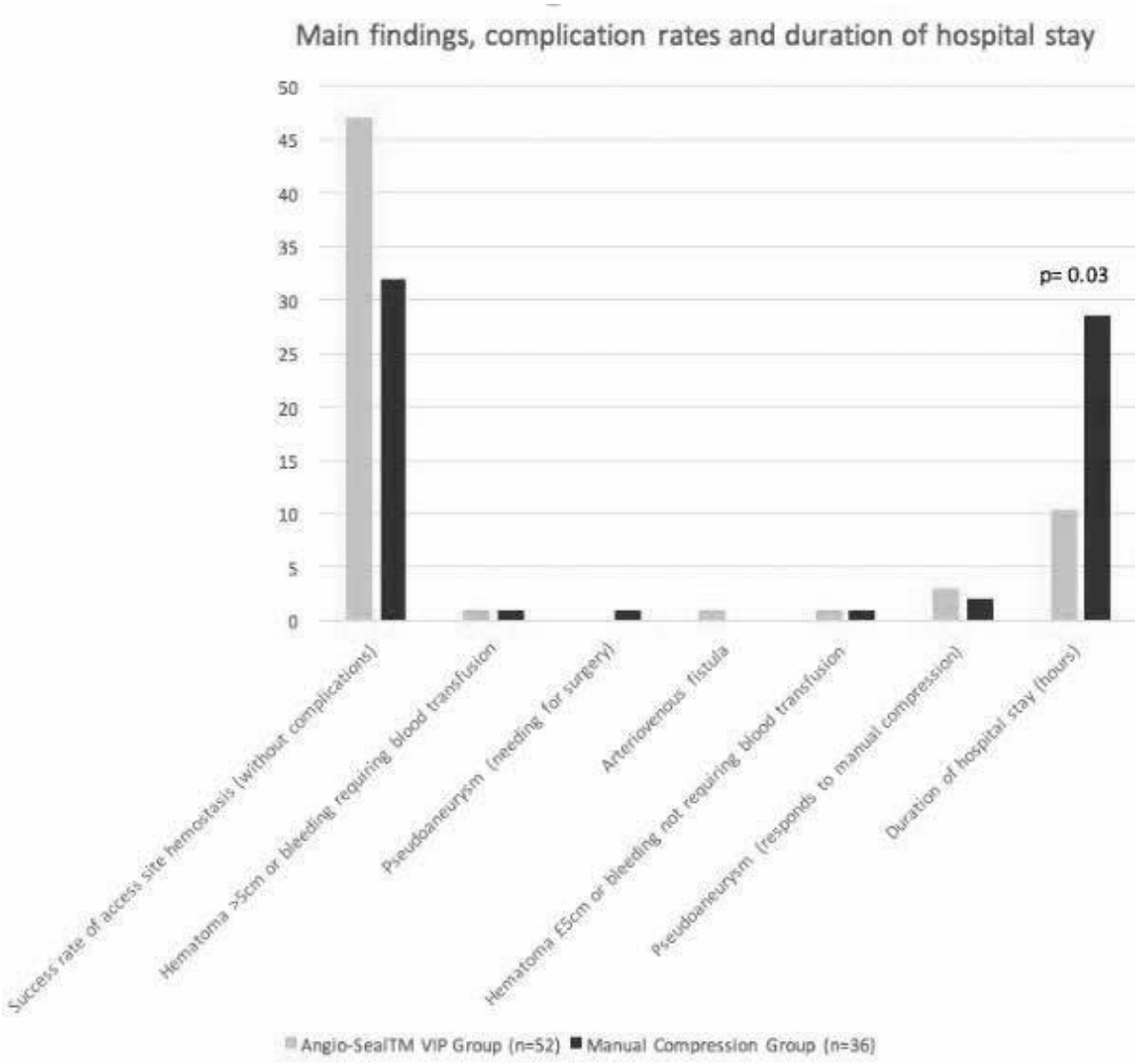
Method: A total of 88 patients who underwent revascularization through antegrade common femoral artery puncture were randomly divided into two groups regarding used tecnique for access site sealing: Angio-SealTM VIP (n=52) and manual compression (n=36). Effectiveness of two methods and hospital stay for both groups were analyzed. Complication rates were analyzed in hospital and at 3 months follow-up.

Results: Successful access site hemostasis without any complications achieved in 47 of 52 patients (90.38%) in Angio-SealTM VIP group and 32 of 36 patients (88.38%) in manual compression group (p= 0.23). Major complication rates were not statiscally different between (3.84% vs 5.55%, p=0.06) Angio-SealTM VIP and manual compression groups, respectively; whereas hospital stay was shorter in Angio-SealTM VIP group (10.4 vs
28.6 hours, p=0.03).

Conclusion: Angio-SealTM VIP device was found safe and effective compared to manual compression alone for access site hemostasis in patients who underwent antegrade CFA puncture for endovascular popliteal and/or BTK intervention.

Keywords: vascular closure device, antegrade, femoral, access site, hemostasis

Main findings, complication rates and duration of hospital stay



Baseline characteristics of study population.

Parameters	Angio-SealTM VIP Group (n=52)	Manual Compression Group (n=36)	P value
Male (n, %)	33 (63.46%)	23 (63.88%)	NS
Age (mean, range)	56.2 (±11.62)	57.6 (±12.08)	NS
Diabetes mellitus (n, %)	40 (76.92%)	30 (83.33%)	NS
Hypertension (n, %)	27 (51.92%)	19 (52.77%)	NS
Dyslipidemia (n, %)	42 (80.76%)	29 (80.55%)	NS
Smoking (n, %)	25 (48.07%)	17 (47.22%)	NS
BMI (kg/m2) (mean, range)	24.2 (±3.62)	25.6 (±4.76)	NS
CKD (n, %)	8 (15.38%)	2 (5.55%)	0.03
Rutherford classicatio n 3 (n, %)	2 (3.84%)	1 (2.77%)	NS
Rutherford classicatio n 4 (n, %)	20 (38.46%)	15 (41.66%)	NS
Rutherford classication 5 (n, %)	20 (38.46%)	14 (38.88%)	NS
Rutherford classication 6 (n, %)	12 (23.07%)	4 (11.11%)	0.04
Buerger's disease (n, %)	4 (7.69%)	2 (5.55%)	NS

OA-47 BALLOON ANGIOPLASTY OF LATERAL CARDIAC VEIN DURING A COMPLICATED CRT-D IMPLANTATION

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OBJECTIVE: Balloon angioplasty is commonly used for predilatation of coronary lesions and postdilatation of an underexpanded stent. Lateral cardiac vein is used for implantation of left ventricular (LV) lead in cardiac resynchronisation therapy (CRT). Venous obstruction is extremely rare but may handicap advancement of LV lead. Herein we present balloon angioplasty of lateral cardiac vein during a complicated CRT-D device implantation.

CASE REPORT: A 68 years old male with an ejection fraction of 30% and LBBB on ECG with a QRS duration of 160 msec was scheduled for CRT-D device implantation. Following placement of the implantable cardioverter defibrillator (ICD) lead, coronary sinus (CS) was entubated and visualised. Complete AV block and asystole developed during entubation of CS which was fixed by pacing by the ICD lead. A mild obstruction was detected in the ostium of lateral cardiac vein that did not complicate LV lead implantation. After battery was placed in the pocket, LV lead was noticed to be ret- racted. Subclavian vein was punctured again and CS was canulated. This time the ostium of the lateral vein was severely obstructed which hampered advancement of the LV lead. After several attempts, a 2.5 x 12 mm balloon was inflated at 16 atm in order to overcome venous obstruction. Then LV lead could easily be advanced throuhout the lateral vein and procedure was completed.

RESULTS: A coronary artery balloon was used to provide effective lumen area for advancement of LV lead during CRT-D implantation in our case. Obstruction of the cardiac veins is rarely encountered during implantation of LV lead. Moreover a mild obstruction can worsen secondary to disrup- tion of a plaque and hamper advancement of LV lead. In that case coronary angioplasty balloons can be used to fix the obstruction in cardiac veins. Even implantation of a stent has been reported in the literature to overcome stenosis. In our case stenting was not required since balloon angioplasty provided effective lumen area to advance the LV lead.

CONCLUSION: It can be challenging to advance LV lead during CRT device implantation becuase of a severe lesion in the cardiac vein. Balloons used for coronary arteries can safely be used in cardiac veins even in high pressures. A physician should not hesitate to use coronary balloons in cardiac veins when LV lead advancement is complicated because of venous obstruction.

Keywords: Balloon angioplasty, cardiac vein, CRT implantation

Figure 1

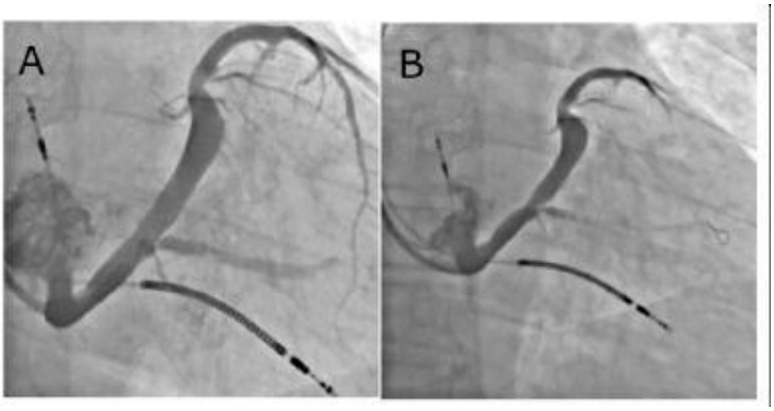

Figure 1. A. Mild stenosis in the ostium of lateral cardiac VEIN at the beginning of the procedure. B. Second wiring of the VEIN after unintended retraction of LV lead. Disruption of the plaque in the ostium of the VEIN can be seen.

Figure 2

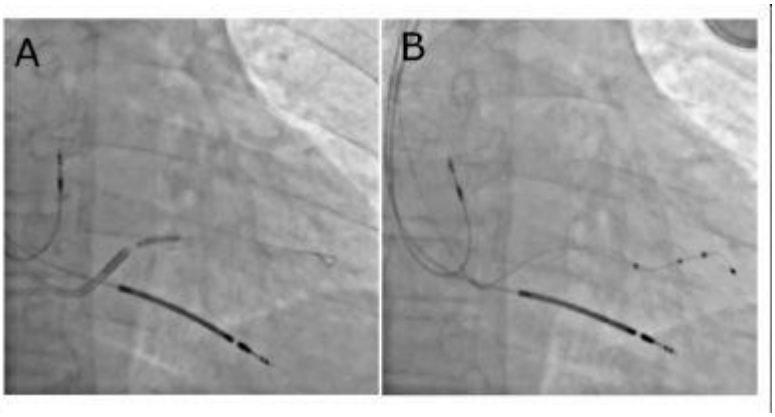

Figure 2. A. A 2.75 x 8 mm balloon was inflated at 16 atm in the ostium of the lateral cardiac VEIN. B. Then the LV lead could easily be ADVANCED and the procedure was completed.

OA-48 NEW İNFLAMMATORY İNDICATOR: ASSOCIATION OF HIGH EOSINOPHIL TO LYMPHOCYTE RATIO WITH ACUT AND SUBACUT STENT THROMBOSIS

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Aim: Coronary stent thrombosis (ST) is a rare but life-threatening event after percutaneous revascularization. Although there are many studies revea- ling the relationship between eosinophils and ST, there is no data in the literature about the relationship between eosinophil to lymphocyte ratio (ELR) and ST development. In this study, we aimed to investigate the relationship of patients ELR values with ST.

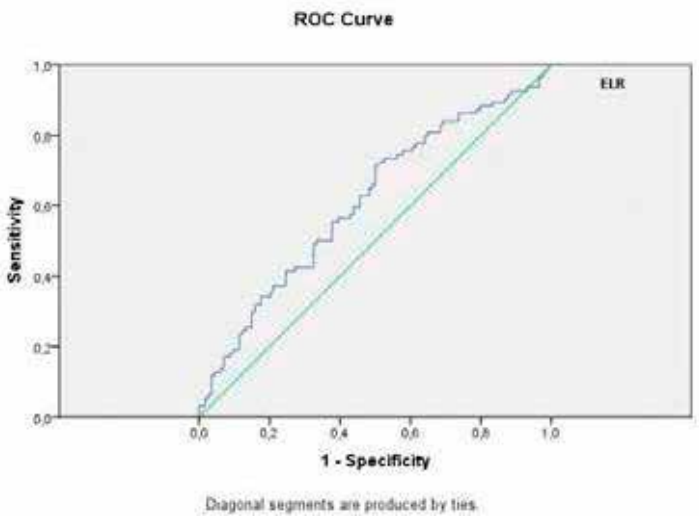
Metods:. A total of 200 patients who applied to our hospital with acute coronary syndrome and who underwent coronary angiography were included in the study. The data of the patients were analyzed retrospectively. 100 patients with acute and subacute ST were taken as an ST group, and 100 patients who were admitted with acute coronary syndrome and had no coronary event in the first month after percutaneous revascularization were included as a control group. ELR values of both groups were compared.

Result: There was no significant difference between the groups in terms of age, gender, hypertension, diabetes mellitus, LDL-cholesterol, HDL- cholesterol, in stent diameter,stent length and left ventricular ejection fraction (LVEF) measurements.(P>0.005) Blood white blood cell count (WBC), neutrophil, eosinophil, ELR and neutrophil-lymphocyte ratio (NLR) values were statistically significantly higher in the ST group compared to the control group.(p<0.005)The receiver operating curve (ROC) analysis revealed that ELR >0.052 had a predictive specificity of 60.5% and a sensitivity of 56.4% (area under the curve [AUC]: 0.612, 95% confidence interval [CI]: 0.535-0.689, p:0.005)

Conclusion: In this study, ELO values were found to be significantly higher in the SR group compared to the control group. In the light of the findings we obtained from the study, ELO, which is an easy and inexpensive method, can help identify patients at high risk for ST and high ELO can be used as a predictor for SR.

Keywords: Stent Thrombosis, Eosinophil, Eosinophil to Lymphocyte Ratio, Inflammation

Figure1



The RECEIVER operating CURVE (ROC) analysis REVEALED that ELR >0.052 had a PREDICTIVE specificity of 60.5% and a SENSITIVITY of 56.4% (area under the CURVE [AUC]: 0.612, 95% confidence INTERVAL [CI]: 0.535-0.689, p:0.005)

table 1

Parameter	Stent Thrombosis (n=100)	No Stent Thrombosis (n=100)	P
Glucose (mg/dl	165.44±104.41	169.56±82.94	0.096
Urea(mg/dl)	34.75±13.27	34.66±13.55	0.865
Creatinin(mg/dl)	0.95±0.23	1.04±0.24	0.873
LDL-C (mg/dl)	123.18±2.33	125.58±4.61	0.520
HDL-C (mg/dl)	33.35±0.94	33.6±0.89	0.645
Triglycerides(mg/dl)	178.34±13.25	188.45±14.18	0.524
HGB (mg/dl)	13.12± 2.02	13.4 ± 2.0	0.240
WBC (103/mm3)	11.84±3.42	10.22±2.92	0.024
Neutrophile (103/mm3)	7.9±2.9	6.7.±2.8	0.003
Lymphosite (103/mm3)	2.10±0.95	2.10±0.95	0.946
Eosonophile (103/mm3)	0.15±0.13	0.11±0.10	0.036
ELR(%)	0.77±0.70	0.53±0.50	0.005
NLR(%)	4.69±3.25	4.06±3.51	0.015

Table 1: Admission blood test results of the groups

OA-49 IS THERE A RELATION BETWEEN MONOCYTE TO HIGH DENSITY LIPOPROTEIN RATIO IN CHRONIC TOTAL OCCLUDED SEGMENTS INTERVENTION SUCCESS IN PERIPHERAL ARTERIAL DISEASE?

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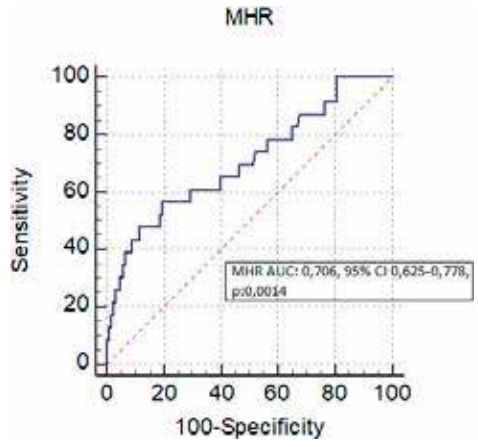
Objective: Peripheral arterial disease (PAD) is associated with increased cardiovascular mortality and morbidity. The aim of the treatment with en- dovascular or surgical intervention is obtaining the flow patency of arteries to reduce ischemia. Inflammation and lipid accumulation are two basic hallmarks of atherosclerosis as a chronic disease. Monocytes are a major source of proinflammatory species during atherogenesis. High-density lipoprotein-cholesterol (HDL-C) shows antiatherosclerotic effects by neutralizing the proinflammatory effect of monocytes via inhibiting the migration of macrophages and LDL oxidation in addition to the efflux of cholesterol from these cells. In this study, we aim to investigate the relationship between monocyte to HDL-C ratio (MHR) and technical success of endovascular intervention of chronic total occlusion (CTO) segment in PAD.

Method: Our study included 146 consecutive patients who referred for peripheral angiography and having at least one CTO segment in between Ja- nuary 2016 and June 2020. Level of disease and lesion characteristics were defined with reference to angiographic findings according to the TASC-II classification. Technical failure was defined as distal no-reflow despite percutaneous balloon and/or stent angioplasty or atherectomy, and which the low-profile balloon etc, cannot proceed the CTO segment.

Results: Monocyte to HDL-C ratio levels were significantly higher in technical failure group than in technical success group with a median level of 28,10 versus 15,19 respectively (p=0,02). In multivariate regression analysis MHR remained independent predictor of technical failure. The predictive performance of MHR was assessed by Receiver Operating Characteristic curve (AUC: 0,706; 95% CI: 0,625-0,778; p=0,0014). A level of MHR > 17 predicted technical failure of CTO segment in PAD with sensitivity and specificity of 56,52% and 80,49%, respectively.

Conclusion: Monocyte to HDL-C (MHR) ratio was found to be associated with technical success of endovascular intervention of C segment in PAD.

ROC curve of monocyte to HDL-C ratio in the prediction of peripheral arterial CTO segment intervention success



The baseline characteristics, laboratory and angiographic results of the patients with technical success and technical failure of CTO segment percutaneous intervention

Table 1. The baseline characteristics, laboratory and angiographic results of the patients with technical success and technical failure of CTO segment percutaneous intervention.

	Patients with technical success (n: 123)		Patients with technical failure (n: 23)		p value
Age, years	40,1	±12,49	66,5	±11,02	0,077
Male gender, n(%)	107	(86,9)	16	(69,5)	0,052
CAD, n(%)	84	(73,7)	13	(68,4)	0,634
Hypertension, n(%)	80	(65,0)	12	(52,2)	0,242
Diabetes mellitus, n(%)	51	(41,5)	10	(43,5)	0,858
Hyperlipidemia, n(%)	45	(36,6)	7	(30,4)	0,573
Smoking, n(%)	63	(51,6)	11	(47,8)	0,738
Fasting blood glucose, mg/dl	119	(98-177)	107	(98-186)	0,450
Creatinine, mg/dl	,99	(0,79-1,14)	,94	(0.78-1.17)	0,589
eGFR, ml/min*1.73 m2	75,09	±29,29	75,96	±20,67	0,994
Triglyceride, mg/dl	129	(92-175)	150	(91-191)	0,374
Total Cholesterol, mg/dl	181,6	±50,31	183,1	±36,34	0,650
HDL cholesterol, mg/dl	39,71	±9,28	37,82	±9,05	0,419
LDL cholesterol, mg/dl	110,4	±32,49	114,5	±26,94	0,526
C- Reactive protein, mg/dl	,730	(0.326-1,66)	1,065	(0.548-2,83)	0,233
White blood cell count, $10^3/\mu L$	8,08	±2.53	10,67	±5,49	0,015
Haemoglobin, g/dl	13,76	±2,47	14,01	±3,18	0,677
Neutrophil count, $10^3/\mu L$	5,29	±2,04	7,28	±4,07	0,012
Monocyte count, $10^3/\mu L$	,484	±0,166	,716	±,356	0,002
Monocyte/HDL ratio	11,84	(8,824-15,19)	17,90	(10,889-28,10)	0,002
TASC-II A lesion, n(%)	25	(20,3)	4	(17,4)	0,793
TASC-II B lesion, n(%)	31	(25,2)	6	(26,1)	
TASC-II C lesion, n(%)	42	(34,1)	8	(34,8)	
TASC-II D lesion, n(%)	25	(20,3)	5	(21,7)	

Abbreviations: CAD; coronary artery disease, CTO; chronic total occlusion, eGFR; estimated glomerular filtration rate, LDL; low density lipoprotein, HDL; high density lipoprotein, TASC-II; Trans-Atlantic Intersociety Consensus-II.

OA-50 ASSOCIATION OF URIC ACID AND C-REACTIVE PROTEIN TO ALBUMIN RATIO WITH THE SEVERITY OF CORONARY ARTERY DISEASE USING SYNTAX SCORE IN NONSTEMI

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Background: C-reactive protein to albumin ratio (CAR) is related to SS score. Serum uric acid (UA) is also associated with SYNTAX score. The predic- tive role of CAR combined with uric acid on the atherosclerotic burden of CAD is less clear in NSTEMI patients. In this study, we aimed to investigate the relationship between CAR and UA and SYNTAX score in NSTEMI patients.

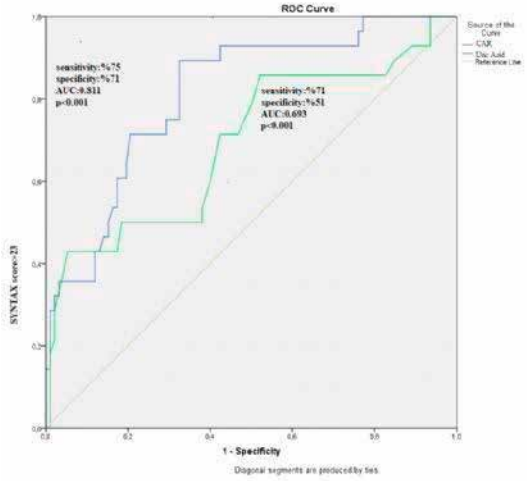
Methods: A total of consecutive 119 patients with the diagnosis of NSTEMI transferred to coronary care unit were included in the study. Serum C-reactive protein(CRP), serum UA and serum albumin were obtained at admission. CAR was calculated as the ratio of serum CRP level (mg/l) to serum albumin level (g/l) multiplied by 100 for easy interpretation. SYNTAX score was computed using an online SYNTAX score calculator by well- experienced two cardiologists blinded to the study data. The study population was divided into two groups based on the SYNTAX score low SYNTAX score (<=23), and high SYNTAX score (>23).

Results: The study included 119 patients admitted the emergency unit with diagnosis of NONSTEMI. 29 of them had SYNTAX score>=23, while the remaining 90 patients had SYNTAX<23. Left ventricle ejection fraction (LV-EF)(p=0.001) and albumin(p=0.03) levels were lower in the intermediate- high SS score group. LDL-C(133.7±33.9 vs. 114.1±31.5 respectively; p= 0.001), uric acid(7.1±2.2 vs. 5.7±1.6 respectively; p=0.001), CRP(17.2±12.1 vs. 9.6±5.7 respectively; p=0.001), CAR(49.2±36.7 vs. 25.8±14.7 respectively; p=0.001), diabetes mellitus(DM)(13(44.8) vs. 15(16.7) respectively; p=0.002) and infarct-related artery (19(%65.5) vs 26(%28.9) respectively; p= 0.001) was significantly higher among intermediate-high SYNTAX score group patients when compared patients with low SYNTAX score patients. Univariate logistic regression analysis identified that uric acid, CAR, DM, LVEF, low density lipoprotein-cholesterol (LDL-C), infarct-related artery were significantly associated with SYNTAX score. Multivariate logistic regression analysis showed that infarct related artery (OR: 4.762, 95% CI: 1.377-16.461, p=0.014), EF (OR: 0.922, 95% CI: 0.864-0,985, p = 0.015),
CAR (OR: 1.502, 95% CI: 1.083-2.085, p = 0.015) and uric acid (OR: 1.390, 95% CI: 1.028–1.881, p = 0.033) were the independent predictors of SYNTAX score. In ROC analysis, a cut-off value of 31.5 CAR had a 75% sensitivity and a 71% specificity for prediction of intermediate-high SYNTAX score(area under curve (AUC): 0.811, p<0.001) and a cut-off value of 5.95 uric acid for intermediate-high SYNTAX score had a 71% sensitivity and 58% specificity for prediction of intermediate-high SYNTAX score (AUC: 0.693, p<0.001).

Conclusion: Although both CAR and serum uric acid is independently associated with SYNTAX score, CAR is more sensitive and specific than UA for prediction SYNTAX score in NONSTEMI patients. Thus, CAR combined with serum UA may be useful to predict the SYNTAX score in NONSTEMI.

Keywords: C-reactive protein-to-albumin ratio, uric acid, syntax score, nonstemı

receiver operating characteristic curve indicating the discriminative ability of CAR and uric acid



Univariate and Multivariate regression analysis

	p	OR	%95 CI	p	OR	%95 CI
IRA	0.001	5.882	2.356-14.688	0.014	4.762	1.377-16.461
EF	0.001	0.889	0.839-0.941	0.015	0.922	0.864-0.985
CAR	0.001	1.621	1.250-2.104	0.015	1.502	1.083-2.085
UA	0.001	1.534	1.203-1.957	0.033	1.390	1.028-1.881
DM	0.004	3.671	1.517-8.885	0.075	3.038	0.895-10.314
LDL	0.016	1.023	1.004-1.042	0.329	1.013	0.988-1.038

CAR: C-REACTIVE protein-to-albumin ratio, CI, confidence INTERVAL, DM: Diabetes Mellitus, EF: Ejection Fraction, IRA: Infarct related artery, LDL-C: low density lipoprotein-cholesterol,, UA: Uric acid

OA-51 COMPARISON OF THE EFFECTS OF BARE METAL STENTS AND DRUG ELUTING STENTS ON C- REACTIVE PROTEIN LEVELS

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Introduction: It's suggested that drug eluting stents (DES) may have systemic anti inflammatory properties and this can play a role in decreased res- tenosis rates. We aimed to compare bare metal stents (BMS) and DES on their effects on C-reactive protein (CRP) levels, a good marker of systemic inflammation. We also aimed to investigate the relation between the inflammation levels and myonecrosis and adverse cardiac events.

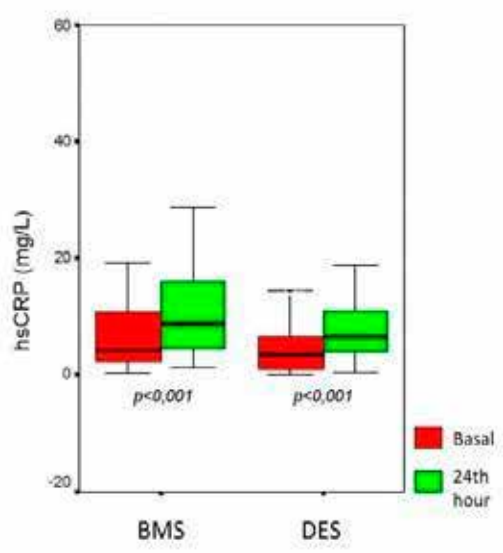
Methods: Patients with stable coronary heart disease undergoing elective stent implantation were grouped as BMS (n=70) and DES (n=42). Exclu- sion criteria were; patients with acute coronary syndrome, having percutaneous coronary intervention or by-pass grefting in the last 2 weeks, with known infection or surgical intervention in the last 2 weeks, having a chronic inflammatory or autoimmune disease, having stent intervention to by- pass grefts, having stent intervention to restenosed stents, having both DES and BMS stent intervention in the same procedure and patients having treatment with glycoprotein IIb/IIIa inhibitor pre or post procedurely. DES types used at the time of the study period were sirolimus, zotarilimus and paclitaxel stents. Basal and 24th hour postprocedural CRP and CKMB levels were measured and the difference (Δ) was compared between the groups. The patients were followed up for adverse cardiac events for one year.

Results: Mean age was 62±11 and 75% were males. Age, sex, hyperlipidemia, hypertension, smoking status, angiotensin converting enzyme inhibitor (ACE-I) or angiotensin receptor blocker (ARB), statin use and basal CRP and CK-MB levels were similar between groups. Angiographic and procedural characteristics of the patients were similar between the two groups. There was significant CRP rise in both groups at 24th hour, but the ΔCRP was 2,1 (0,5 – 6,2) mg/L in BMS and 2,3 (0,2 – 5,2) mg/L in DES group, the difference wasn't statistically significant (p=0,703). (figure 1). When we assessed the variables contributing to ΔCRP in BMS and DES groups seperately, only the stent length variable was significantly correlated with ΔCRP in DES group (p=0,016), whereas in BMS group stent length was not significantly related with ΔCRP (p=0,341) (Figure 2). ΔCKMB and adverse cardiac event rates were similar between the two groups (p=0,897 and p=0,785). There was no correlation between ΔCRP and ΔCKMB in both groups (r= -0,090 and p=0,459 for BMS, r=0,158 and p= 0,318 for DES). The effect of ΔCRP on the incidence of adverse cardiac events was not significant (p=0,349 for BMS, p=0,135 for DES).

Conclusion: As a result, we concluded that there was no difference at the level of systemic inflammation between BMS and DES groups, in consis- tency with most of the published trials in this topic. At similar levels of systemic inflammation, the local anti-inflammatory properties of DES can play a role at decreased restenosis rates.

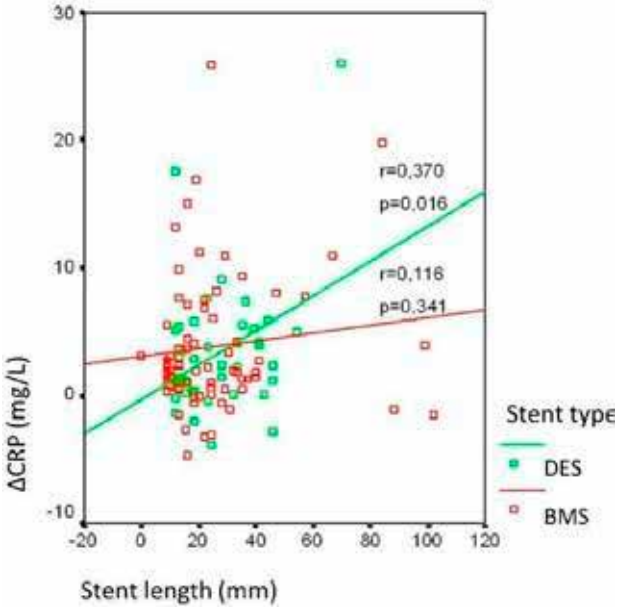
Keywords: bare metal stent, drug eluting stent, CRP, inflammation

Figure 1:



Basal and 24th hour hsCRP LEVELS in BMS and DES groups

Figure 2



the stent length was significantly correlated with ΔCRP in DES group, whereas in BMS group stent length was not significantly related with ΔCRP

OA-52 CARDIOVASCULAR RISK UNAWARENESS IS COMMON IN INDIVIDUALS ADMITTING TO CARDIOLOGY OUTPATIENT CLINICS IN TURKEY: THE CVSCORE-TR STUDY

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Objectives: Cardiovascular "risk" is an abstract concept that is frequently misunderstood by the general public. However, correct estimation of one's own cardiovascular risk is important as risk unawareness is associated with noncompliance with interventions aimed to reduce risk burden. Knowing the prevalence and factors linked with an increased probability of risk unawareness are therefore important to develop strategies aimed to increase risk awareness. Aims: To study prevalence of risk unawareness and to understand risk markers associated with risk underestimation and overestima- tion. Design: A total of 1716 participants were enrolled to the study in 33 centers across Turkey. Relevant demographic and clinical data were collected by direct interview. Cardiovascular risk of the participants was calculated using SCORE risk charts. Results: Ten-year risk for a fatal cardiovascular event was calculated as low in 633 (36.8%), intermediate in 513 (29.9%) and high-very high in 570 (33.2%) participants, respectively. According to these findings, 34.6% (n=593) of the participants estimated their risk correctly, whereas 22.7% (n=390) of the participants over-estimated and 42.7% (n=733) of the participants underestimated their risk. Male gender was the sole factor that was associated with an increased risk of underestimation, while having hypertension, significant valve disease or atrial fibrillation was associated with an increased odds for risk overestimation. Conclusions: Only one-thirds of the sample was aware of their calculated risk for cardiovascular mortality and risk underestimation was the most common mode of risk unawareness, prompting concerns on the possible impact of the latter on adherence to the strategies aimed to reduce cardiovascular risk

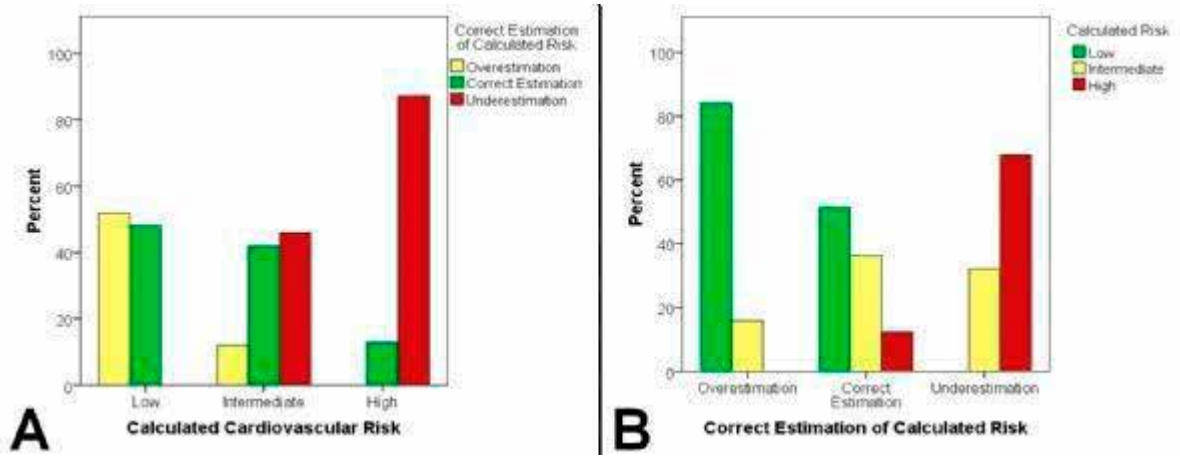
Independent Predictors of Risk Underestimation and Overestimation

Demographic and clinical markers of risk underestimation and overestimation were given in Table 4. Male gender was as a predictor of underesti- mation, even after adjusting for high risk status. Having significant valve disease and/or AF were both negative risk markers for underestimation and conversely, positive risk markers for overestimation (Table 4). Hypertension appeared as a risk marker for overestimation, but it was not associated with underestimation despite being more frequent in risk underestimators.

CVSCORE-TR project evaluated the calculated and perceived risk for 10-year risk of death from a CVD in patients admitting to cardiology outpatient clinics. Main findings from the study were: i) the overall agreement between calculated and perceived risk was poor, with only one-thirds of partici- pants were risk aware, ii) participants who correctly estimated their risk had a lower overall risk profile, even after exclusion of low-intermediate risk participants and iii) several demographic and clinical parameters were found to be independently related with risk unawareness, even after adjusting for risk status

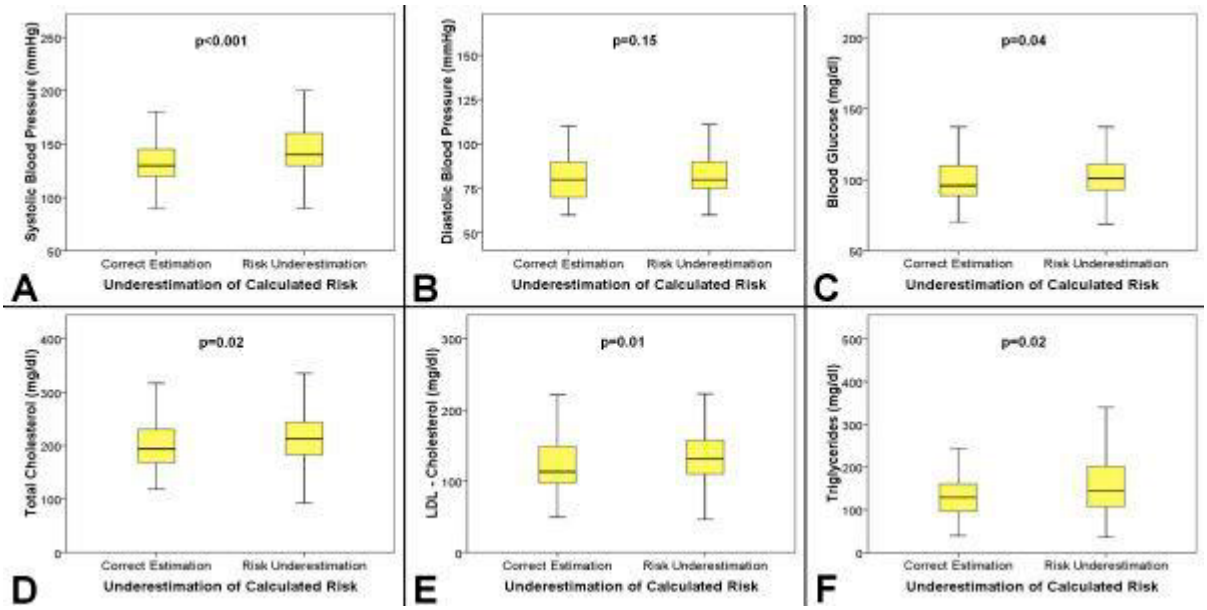
Keywords: awareness, cardiovascular diseases, prevalence, risk marker

Figure 1



Risk awareness according to calculated and PERCEIVED CARDIOVASCULAR risk. Clustered bar graphs showing risk awareness and unawareness in the study population. Panel A shows the PREVALENCE of risk awareness and unawareness for INDIVIDUAL risk categories, while Panel B shows CUMULATIVE distribution of calculated risk according to the correct estimation of the risk.

Figure 2



Distribution of clinical and laboratory parameters according to correct estimation VS. underestimation in high-risk group. Box plots showing blood pressure measurements and blood chemistry results for high-risk patients who correctly estimated (n=73) or underestimated (n=497) their calculated risk. Boxes show interquartile range, while the horizontal line within the boxes show median VALUE and whiskers indicate uppermost and lowermost VALUES.

Demographic characteristics, past medical history, laboratory findings and medications for participants with low, intermediate and high/very high risk for mortality from a cardiovascular cause within the next ten years.

Parameter	Low CVD Risk (n=633)	Intermediate CVD Risk (n=513)	High CVD Risk (n=570)	p value
Age (y)	47 ± 6	56 ± 7	65 ± 8	<0.001
Gender (n, Male %)	192 (30)	246 (48)	313 (55)	<0.001
Weight (kg)	78 ± 14	78 ± 13	80 ± 13	0.08
Height (cm)	166 ± 8	166 ± 9	166 ± 9	0.74
BMI (kg/m2)	28.3 ± 4.7	28.9 ± 4.3	28.9 ± 4.3	0.15
Systolic Blood Pressure (mmHg)	126 ± 17	132 ± 18	132 ± 18	<0.001
Diastolic Blood Pressure (mmHg)	76 ± 11	80 ± 12	80 ± 12	<0.001
Heart Rate (bpm)	78 ± 12	77 ± 13	77 ± 13	0.26
Hypertension (n,%)	193 (31)	234 (46)	323 (57)	<0.001
Hypercholesterolemia (n,%)	122 (19)	135 (26)	186 (33)	<0.001
Present Smoking (n,%)	147 (23)	108 (21)	143 (25)	0.29
Systolic Heart Failure (n,%)	55 (9)	41 (8)	23 (4)	0.003
Valve Disease (n,%)	70 (11)	68 (13)	81 (14)	0.24
Atrial Fibrillation (n,%)	32 (5)	54 (10)	69 (12)	<0.001
Total Number of Drugs	1.0 (0.0 – 2.0)	2.0 (0.0 – 3.0)	2.0 (1.0 – 3.0)	<0.001
Total Number of CV Drugs	0.0 (0.0 – 1.0)	1.0 (0.0 – 2.0)	2.0 (1.0 – 3.0)	<0.001

OA-54 THE EFFECT OF TERBUTALINE ON SYSTOLIC PULMONARY ARTERY PRESSURE AND HEART RATE RECOVERY

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Objective: Both pulmonary hypertension (PHT) and autonomic dysfunction are the two main pathways responsible for mortality in patients with Chronic Obstructive Pulmonary Disease (COPD). This study aims to investigate the effect of the terbutaline tablet treatment (TTT) on heart rate re- covery (HRR) and systolic pulmonary artery pressure (sPAP) values measured during the maximal exercise test in newly diagnosed COPD patients.
Method: 43 patients who were admitted to the outpatient clinic of the chest diseases department, between January2018-November 2018, having mild obstructive findings in Respiratory Function Tests (RFT) that was indicating diagnose of COPD, were included in the study group (SG). In the study group, the mean age was 55.73 ± 7.14 years (40-67). The control group (CG) consisted of 47 patients, having no obstruction in RFT. In the control group, the mean age was 56.59 ± 7.24 years (38-66). After RFT, resting Electrocardiograms (ECG), and Transthoracic Echocardiograms (TTE) have been taken, the SG and CG underwent the first treadmill exercise test (TET). The SG received a maximum of 5 mg/day terbutaline for 6 months per- oral, and underwent a second TET at least 2 hours later after the last tablet was taken.
Results: In the CG, the difference between basal and the 3rd-minute recovery HR was statistically insignificant (79.79±10.01 vs 81.23±9.25 beat/ minute, p=0.095). This was also valid for sPAP (20.85±3.24 vs 20.08±2.26 mm Hg, p=0.74). In the SG, the difference between basal and the 3rd- minute recovery HR was statistically significant (89.32±1.75 vs and 92.39±2.36 beat/minute, p<0.01), this was also valid for sPAP (30.07±5.78 vs 39.02±5.13 mm Hg, p<0.01). After terbutaline treatment, in the SG basal HR and 3rd-minute HRR values were significantly higher at the second TET (Respectively, 89.32±1.75 vs 94.22±3.65 and p<0.01, 92.39±2.36 vs 96.44±4.62 beats/minute and p<0.01). After terbutaline treatment, basal and 3rd-minute sPAP values of the SG at the second TET were significantly lower than the first TET (Respectively, 27.56±4.67 vs 30.07±5.78 and p<0.01, 35.23±3.71 vs 39.02±5.13 mm Hg and p<0.01).
Conclusion: TTT had positive effects on sPAP recovery and had negative effects on HRR in COPD patients.
Keywords: COPD, treadmill exercise test, systolic pulmonary arterial pressure, heart rate recovery, terbutaline

Table 1: The sociodemographic and basal clinical properties of study and control group

Variables	Study group	Control group	T / Z-value	P-value
Age, years	55.74 ±7.14	56.59±7.24	T=0.56	0.28
Gender, Male	%76.74	%76.59	Z=0.016	0.98
Gender, Female	%23.26	%23.41	Z=0.016	0.15
Smoking, packages/year	23.51±4.36	22.96±5.17	T=1.02	0.16
LV EDD, cm	4.73±0.51	4.66±0.38	T=0.86	0.45
LV ESD, cm	3.11±0.23	3.07±0.21	T=0.86	0.39
LV EDV, cm3	111.45±12.63	109.53±11.53	T=0.75	0.45
LV ESV, cm3	40.35±5.72	41.25±4.99	T=-0.79	0.42
Stroke Volume, cm3	66.72±9.52	64.25±8.42	T=1.30	0.19
Ejection Fraction, %	66.32±9.45	67.21±10.56	T=0.42	0.67
LV mass, gram	178.53±31.63	176.41±28.73	T=0.33	0.73
Total Cholesterol, mg/dL	166.32±42.63	170.73±37.51	T=0.52	0.60
LDL, mg/dL	105.63±24.52	106.42±18.53	T=0.17	0.86
Triglycerides, mg/dL	105.63±24.52	166.37±25.31	T=0.06	0.94
Hemoglobin, gr/dL	14.52±2.53	14.42±2.73	T=0.18	0.85
Calcium, mg/dL	9.63±1.13	9.61±0.98	T=0.09	0.82
Sodium, mEq/L	140.52±2.83	140.83±1.91	T=0.61	0.54
Potassium, mEq/L	4.09±0.61	4.17±0.60	T=0.62	0.53
Magnesium, mg/dL	1.98±0.29	1.91±0.38	T=0.97	0.33
SBP, mm Hg	123.63±11.63	121.92±12.87	T=0.65	0.51
DBP, mm Hg	74.82±8.59	77.73±7.92	T=1.67	0.09
TSH, mIU/L	3.45±0.35	3.41±0.29	T=0.59	0.55
CRP, mg/L	0.39±0.07	0.37±0.06	T=1.45	0.14
Fibrinogen,	251.45±32.63	241.72±29.52	T=1.48	0.14
WBC, N/micoL	8723.52±2573.73	7942.53±3154.34	T=1.28	0.20
Neutrophil, %	67.45±11.63	65.36±12.37	T=0.82	0.41
Lymphocyte, %	23.63±4.62	22.83±6.32	T=0.68	0.49
Neutrophil/Lymphocyte, %	2.93±0.34	2.95±0.29	T=-0.30	0.76

Variables	Study group	Control group	T / Z-value	P-value
Basal HR, bpm	80.23±10.24	79.79±10,01	T=0.20	0.41
Peak HR, bpm	154.26±6.40	158.72±6.26	T=-3.34	0.006
1st min. recovery HR, bpm	133.33±6.31	126.09±7.37	T=4.98	<0.00001
2nd min. recovery HR bpm	115.24±6.75	106.4±5.84	T=6.54	<0.00001
3rd min. recovery HR, bpm	86.93±9.55	81.23±9.25	T=2.87	0.002
Basal sPAP	30.07±5.78	20.85±3.24	T=9.43	<0.00001
Peak sPAP	47.42±6.31	34.06±3.88	T=12.21	<0.00001
3rd min. recovery sPAP	39.02±5.13	20.085±2.26	T=22.06	<0.00001
POS before TET,%	91.39±2.36	95.80±1.43	T=-10.80	<0.00001
FEV1/FVC before TET, %	63.76±2.72	83.44±2.32	T=-36.92	<0.00001
FEV1, before TET, liter	2.37±0.22	2.81±0.11	T=-4.66	<0.00001
FVC, before TET, liter	3.70±0.20	3.41±0.10	T=4.13	0.00002
BMI, kg/m2	28.95±4.30	27.58±5.10	T=1.04	0.15

BMI: Body Mass Index, HR: Heart Rate, sPAP: systolic Pulmonary Arterial Pressure, POS; Peripheral Oxygen Saturation, BPM; Beat Per Minute, FEV1; Forced Expiratory Volume in one second, FVC; Forced Vital Capacity, TET; Treadmill Exercise Test, LV; Left Ventricle, EDD; End diastolic diameter, ESD; End systolic diameter, EDV; End diastolic VOLUME, ESV; End systolic VOLÜME, LDL; Low-density lipoprotein, SBP; Systolic blood pressure, DBP; Diastolic blood pressure, TSH; Thyroid-stimulating hormone, CRP; C-REACTIVE protein, WBC; White blood cell

OA-55 THE RELATIONSHIP BETWEEN THE AMOUNT OF EPICARDIAL ADIPOSE TISSUE MEASURED ON ECHOCARDIOGRAPHY AND DECREASED HEART RATE VARIABILITY IN EXERCISE STRESS TEST IN PATIENTS WITH METABOLIC SYNDROME

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Introduction: In this study, the impact of the epicardial adipose tissue (EAT) thickness on the heart rate recovery (HRV) was investigated by com- paring the HRV values in the second minute of the recovery phase of the exercise test applied to metabolic syndrome (MS) patients and the healthy control group.

Patients and Methods: A total of 78 people, 30 of them healthy control group and 48 of them diagnosed with MS for the first time were included in the study which was carried out in a Uludağ University's Medical Faculty Hospital in Turkey. The study was designed prospectively. The EAT thickness measurement was performed and recorded for all individuals. All patients underwent symptom limited exercise test in accordance with Bruce proto- col. The relationship between known risk factors of coronary artery disease of the EAT thickness measured by echocardiography and decreased HRV index in the recovery phase in the exercise stress test was investigated.

Results: Metabolic syndrome group was found out to have a significantly thicker EAT thickness (p<0,01). Recovery 2nd minute heart rate change was determined to be statistically different between the two groups (p<0,05). The triglyceride levels went up, so did the EAT thickness. Within the MS group, ones having LDL>160 mg/dl level had a significantly thicker EAT than the ones with an LDL<160 level. The group with the HDL level <40 mg/ dl had a significantly thicker EAT thickness. In the cases included in the study, the most important variable affecting the recovery 2nd minute heart rate variation (HRV2) was determined to be the EAT (p<0,01).

DISCUSSION: Fatalities due to coronary artery disease are still high despite developing treatment options. Appropriate risk categorization should be performed in order to ascertain the appropriate treatment options for each patient(7). Main research areas of cardiology are preventing the catastrop- hic consequences of the coronary artery disease and finding out the trigger factors, biomarkers and therapeutic molecules.

This study aimed to find simple approaches that would be useful in early diagnosis of the CAD, in patients with MS. When CAD progresses, its cost as well as its mortality rate increase. Studies focus on non-invasive and simple prognostic identifiers. We are of the opinion that routine measurement of the EAT might be a good indicator of the CAD before the apparent ischemic findings emerge, which is supported by the findings of the present study.

Conclusion: The routine measurement of the EAT might be a good indicator of the coronary artery diseases before the apparent ischemic findings emerge, which is supported by the findings of the present study.

Keywords: Epicardial fat, Heart rate recovery, Metabolic syndrome; Echocardiography; Exercise stress test

figure 1

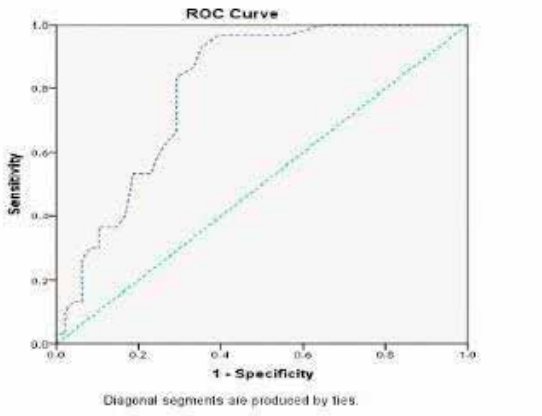

Figure 1. Recovery cut-off evaluation for 2nd minute heart rate change

figure 2

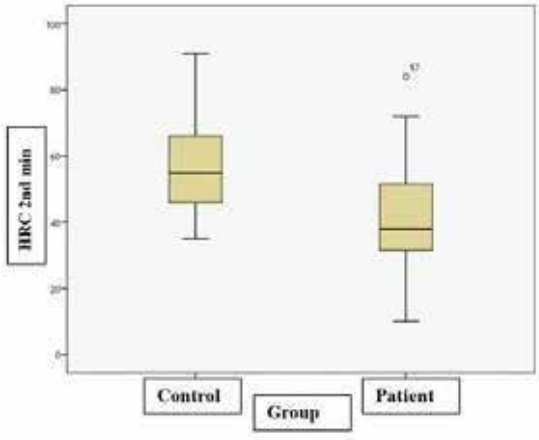

Figure 2. Recovery 2nd minute heart rate change (HRC 2nd min)

Table 3. Relationship between heart rate variability and epicardial adipose tissue.

	HRR 2	n	Epicardial Adipose Tissue Thickness (mm) Avg±SD	
In All Cases	<= 43 >43	39 39	6,17 ±1,64 4,20 ±1,42	0.001*
Patient	<= 43 >43	34 14	6,52±1,43 5,11±1,90	0.007*
Control	<= 43 >43	5 25	3,76±0,70 3,68±0,68	0,83

**Statistically VERY significant p<0,01 HRR 2: Second minute heart rate RECOVERY during exercise stres test.*

OA-57 TREATMENT OF THE LEFT AND THE RIGHT CORONARY ARTERIES' OSTIAL LESIONS BY STENTING IN A PATIENT WITH IMMUNE THROMBOCYTOPENIC PURPURA

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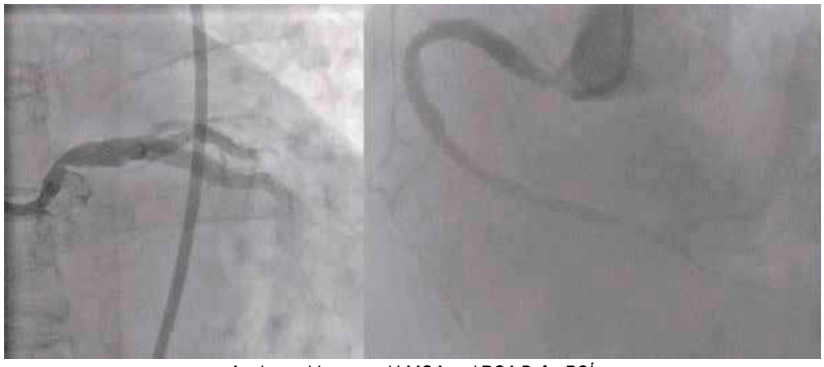
Objective: Immune thrombocytopenic purpura is an autoimmune disease which is characterized with a decrease in number of platelets in blood. Gat- hering ITP and coronary artery disease are a rare situation. These patients are treated with percutaneous, surgery or medical therapy. Here we present a rare case of Immune thrombocytopenic purpura patient with refractory grade 3 Canadian Cardiovascular Society (CCS) angina besides maximum anti-ischemic therapy, whose ostial lesions of left main coronary artery and right coronary artery were treated with stent.

Case: Our patient is 61 years old female who resting angina pectoris (Canada classification class 4). She has immun trombocytopenic purpura for 5 years. Her hematological investigation showed thrombocyte counts 40x10^9/L. We performed coronary angiography after hematology counsultati- on. Coronary angiography showed left main coronary artery ostial 99% stenosis, right coronary artery ostial 90% stenosis. At the same section, we implanted bare metal stent 4.0x12 mm for right coronary artery and 4.5x15 mm for left main coronary artey ostial lesions, respectly. Angina of the patient disaapeared and she was discharged next day. There were no any problems at 6th month outpatient control.

CONCLUSİON: PCI can be performed safely in patients with ITP whose platelet count is >30 x10 ^ 9 / L. To reduce the risk of procedure-related complications, it is necessary not to use large sheaths, to be careful about operation area for the hemostasis and it is important to individualize the therapy regimens of antiplatelet / anticoagulant according to the patient.

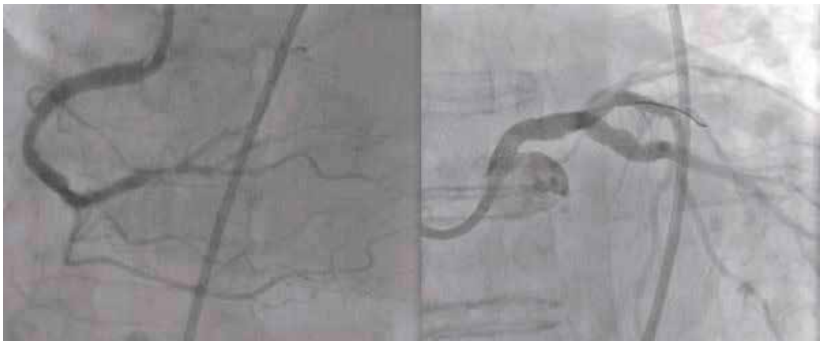
Keywords: Coranary angiography, Immune thrombocytopenic purpura, Coronary artery disease

figure 1



Angiographic VIEW od LMCA and RCA Befor PCİ

figure 2



Angiographic VIEW of LMCA and RCA after PCİ

OA-58 A MASTER STROKE INTERVENTION: SUCCESSFUL DOUBLE KISSING MINI CRUSH TECHNIQUE IN LMCA IN THE SETTING OF ACUTE MI

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[2]*Department of Cardiology, Giresun University*

OBJECTIVE: One of the most challenging scenarios for an interventional cardiologist is to encounter with a bifurcation lesion in the setting of acute MI. Provisional strategy is the dafault approach in most of the cases. However some lesions require a more sophisticated technique in order to provide effective blood flow and long term patency. Herein we present a succesful DK Mini Crush Technique in LMCA in the setting of acute MI.

CASE REPORT: A 90 years old male patient with no hystory of chronic disease presented with NSTEMI and underwent urgent coronary angiography because of ongoing chest pain. A bifurcation lesion in distal LMCA with medina classification of 1,1,1 was detected (Figure 1a). Both LAD and Cx were wired and predilatated with 2.0 x 16 mm balloons (Figure 1b, 1c). Then a 3 x 12 mm balloon protruding into distal LMCA was parked in LAD and a 3x16 mm DES was deployed in Cx again with minimal protrusion into distal LMCA (Figure 1d). The stent in Cx was crushed via inflation of the balloon in LAD (Figure 1e). The wire in the Cx was removed, Cx was rewired and first kissing balloon inflation was performed (Figure 1f). After first kissing balloon, unexpectedly, blood flow deteriorated in mid LAD. A 2.5 x 24 mm DES was deployed in mid LAD (Figure 2a). A 3 x 28 mm DES was positioned in LAD protruding into LMCA (Figure 2b). The stent was deployed at 20 atm and the stent in Cx was crushed again (Figure 2c). Cx was again rewired and the struts of the stent in LAD covering Cx ostium were enlarged via a 1.5x8 mm balloon (Figure 2d). Then second kissing balloon inflation was performed (Figure 2e). Successful DK mini crush technique in distal LMCA resulted in satisfactory blood flow Figure 2f).

RESULTS: A distal LMCA lesion was successfully treated via DK Mini Crush technique in our case. LMCA bifurcation lesions are very challenging especially in the setting of acute MI. DK mini crush is a novel technique with relatively lower restenosis rates at the cost of longer procedure time. TAP or V stenting would be easier to perform in this case however would pose high risk for restenosis in long term. DK Mini Crush technique is superior to other bifurcation techniques in long term follow up but should be performed by experienced hands especially in LMCA bifurcation lesions.

CONCLUSIONS: It is crucial to be familiar with all bifurcation techniques in case converting from one to another is required. DK Mini Crush technique can safely be performed even in the setting of acute MI in experienced hands.

Keywords: Double Kissing Mini Crush, Left Main, Bifurcation

Figure 1

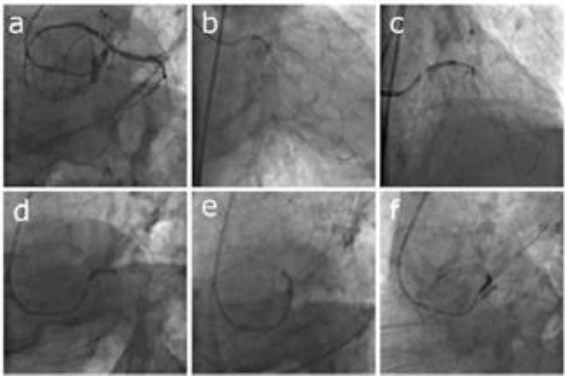

Figure 1. a) Medina 1,1,1 lesion in distal LMCA, b) Predilatation in LAD with 2.0 x 16 mm balloon, c) Predilatation in Cx with 2.0 x 16 mm balloon, d) A 3x16 mm DES was deployed in Cx with minimal protrusion into distal LMCA while a 3 x 12 mm balloon was parked in LAD, e) The stent in Cx was crushed via inflation of the balloon in LAD, f) The wire in the Cx was removed, Cx was rewired and first kissing balloon inflation was performed

Figure 2

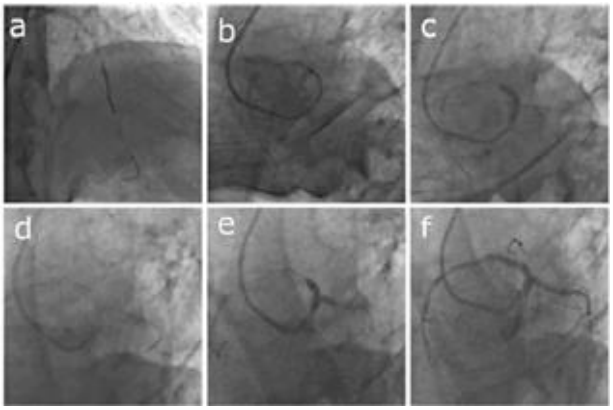

Figure 2. a) Deployment of 2.5 x 24 mm DES in mid LAD, b) A 3 x 28 mm DES was positioned in LAD protruding into LMCA, c) The stent was deployed at 20 atm and the stent in Cx was crushed again, d) Cx was again rewired and the struts of the stent in LAD covering Cx ostium were enlarged via a 1.5x8 mm balloon, e) Second kissing balloon inflation, f) Final Appearance

OA-59 A RARE COMPLICATION FOLLOWING PERCUTANEOUS CORONARY INTERVENTION: A BROKEN GUIDEWIRE TIP IN THE RIGHT CORONARY ARTERY

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The coronary guidewire tip fracture is a very rare complication of percutaneous coronary intervention (PCI) with an incidence of 0.1-0.2%. The most common mechanisms for fracture of the coronary guidewire are entrapment, excessive rotation, or forceful traction of the guidewire. A tortuous, calcified, and distal lesion is more likely to cause fracture due to the risk of overcoiling and bending of the guidewire. We present the case of a man who undergone PCI of right coronary artery (RCA) ten years ago that was complicated with a retained broken guidewire fragment in the RCA.

A 76-year-old man underwent urgent coronary angiography after presenting to hospital with a non-ST elevation myocardial infarction. 14 years pre- viously he had undergone PCI of the left anterior descending (LAD) and the left circumflex (LCX) coronary arteries at another hospital. He had also a history of a failed PCI for RCA ten years ago. Coronary angiography showed a guidewire tip in the distal RCA (Figure 1). The RCA was totally occluded by the wire in the distal segment of the artery. There was also a severe diffuse restenosis within the stented segment of LAD. The LCX artery was patent (Figure 2). Stenting was recommended for his LAD restenosis but he refused any intervention.

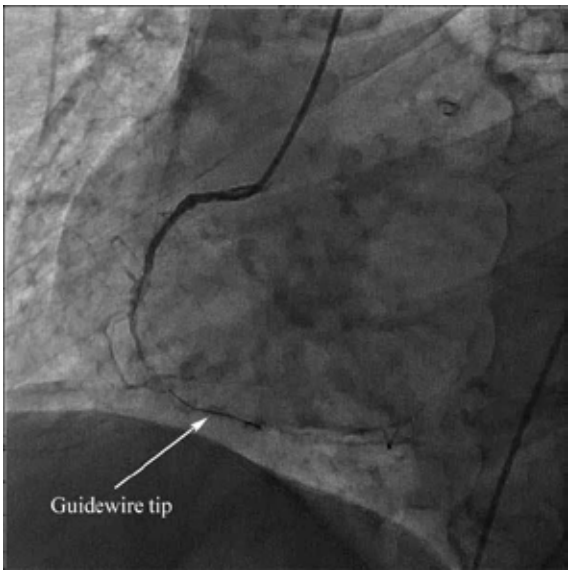
In the present case, we think that several attempts to pass the previously stented proximal RCA and to stenting the distal tortuous portion of the RCA could lead to guidewire tip fracture. Although we did know the guidewire type in the present case, in 35% of the reported cases a polymer-jacketed guidewire has been implicated as a risk factor. The guidewire remnants may serve as a nidus for vascular endothelial injury and platelet deposition, leading to acute thrombus formation or chronic total occlusion of the involved vessel. The retained guidewire fragments in patent coronary arteries may cause arterial narrowing despite systemic anticoagulation. On the other hand, broken guidewire tips retained for a long time within the coronary circulation may be benign, particularly when they are within a distal part of the vessel as in the present case. This may be explained by covering of guidewire tip with an outgrowth of vascular endothelium, rendering it immobile and non-thrombogenic.

In contrast to broken guidewire tips, entrapped coronary catheter remnants or stents are life threatening because they can lead to myocardial ische- mia, infarction, or lethal arrhythmia due to intracoronary thrombosis.

The management of the retained guidewire fragments includes surgery, retrieval with a snare loop technique, stent implantation within a guide cathe- ter or the fragment can be left in situ with observation as in the present case.

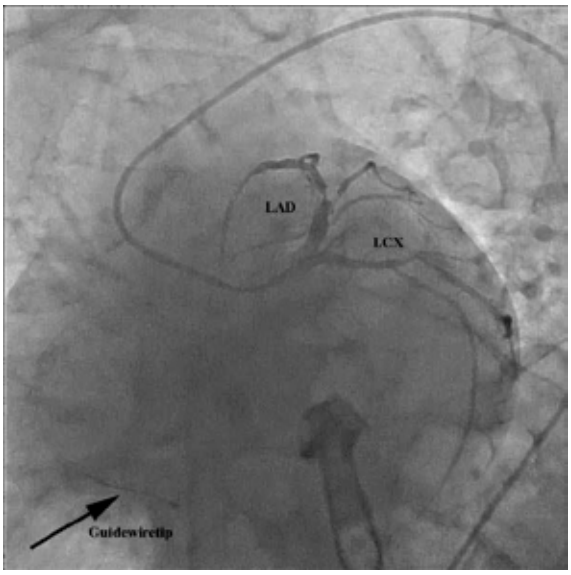
Keywords: Percutaneous coronary intervention, retained guidewire tip, complication

Figure 1



Angiographic image showing the retained guidewire tip in the distal right coronary artery (arrow)

Figure 2



Angiographic image showing the left anterior descending artery stenosis and the retained guidewire (arrow). LAD-Left anterior descending artery LCX-Left circumflex artery

OA-60 DO MANUFACTURER'S DERIVED RECOMMENDATIONS PREDICT VASCULAR COMPLICATIONS DURING TRANSFEMORAL TAVI APPROACHES USING DEFAULT PROGLIDE STRATEGY?

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Objectives: Up to one to third of the patients may not be candidates for transfemoral transcatheter aortic valve implantation (TF-TAVI). However, most inoperable patients can be treated with TF-TAVI although not recommended by manufacturer and numerous professional societies. This study aimed to investigate the predictive value of manufacturer's based recommendations for vascular access site complications using perclose Proglide device.

Methods: Between 2015 and 2019, 208 patients underwent the TF TAVI procedure. This collective was divided into two groups: group 1, (n=144) was retrospectively divided 'eligible' and group 2 (n=64) deemed as 'ineligible' based on the minimal lumen diameter recommendations given by the valve manufacturers, and presence of concentric calcifications. Minimum iliofemoral diameter and iliofemoral calcium score (CS), tortuosity score (TS), sheath-to femoral artery ratio (SFAR) were estimated from contrast-enhanced multidetector computed tomography imaging. The baseline, procedural characteristics and all outcomes (defined according to VARC-2 criteria) were retrospectively compared (Figure 1).

Results: Vessel properties were significantly worse in the "unsuitable group." The sheath-to-iliofemoral artery ratio (SFAR) and calcium score were 1.13±0.15 and 1.66±0.99 in the ineligible group, compared to 0.88±0.107 (p<0.001) and 1.24±0.73 (p=0.003) in the eligible group. There was no significant difference in the incidence of major and minor vascular complications (eligible group: 6.3% vs. ineligible group: 12.3%, p = 0.13; eligible group 10.4% vs. in eligible group 15.6%, p = 0.29, respectively) with a increased rate of minor bleeding (5.6% vs. 12.5 %, p=0.08) and rupture rates (0.7% vs. 6.3%; p=0.03) in ineligible group. In hospital mortality was similar in both groups (p= 0.96). Types of major vascular complications were depicted in Table 1. In a multivariate logistic regression analysis that included SFAR, iliofemoral CS, and anticoagulation use, and female sex and ine- ligibility for TF-TAVI; SFAR was the only the sole independent predictor of access site complications (HR 526, [CI] 95% 5.98-46264, p=0.006) (Figure 2). The SFAR threshold with the highest sum of sensitivity (77%) and specificity (64%) for access site complications was 0.99 (ROC area under the curve 0.70, 95% [CI]: 0.56-0.84, p=0.007).

Conclusions: According to our results, manufacturer based thresholds of determining ineligibility seems safe, over-conservative but do not predict major vascular complications. SFAR was the only independent predictor of access site complications and therefore should be systematically assessed preceding TF-TAVI procedures.

Keywords: TAVI, proglide, transfemoral-TAVI, major vascular complications

Figure 1

Table 1 Baseline Patient and Procedural charachteristics

	Total (n=208)	TF-TAVI eligible (n=144)	TF-TAVI ineligible (n=64)	p
Age (years)	79.15±7.62	79.3±7.0	78.9±8.8	0.73
Men (%)	109(52.4%)	79(54.9%)	30 (46.9%)	0.28
logEuroScore	25.9±4	26.07±4.2	25.58±3.5	0.42
NYHA III-IV	109(52.4%)	78(54.2%)	31(48.4%)	0.44
LVEF-%	51.3±12	50.5±12.7	52.9±10.1	0.15
BMI	25.9±3.38	26.07±4.2	25.6±3.5	0.32
Hypertension	187 (89.9%)	130 (90.3%)	57(89.1%)	0.79
Diabetes	46(22.1%)	36(25%)	10(15.6%)	0.13
CAD	120(57.7%)	77(53.5%)	43 (67.2%)	0.07
PAD	45(21.6%)	26(18.1%)	19(29.7%)	0.06
GFR(ml/min/1.73 m2)	70.4±25.2	70.4±25.4	70.7±24.8	0.93
Previous MI	55(26.4%)	37(25.7%)	188(28.1%)	0.71
Previous CVO	12(5.8%)	8(5.6%)	4(6.3%)	0.72
Previous PCI	56(26.9%)	43(29.9%)	13(20.3%)	0.15
CABG	39 (18.8%)	26(18.1%)	13(20.3%)	0.7
AF	50(24%)	38(26.6%)	12(18.8%)	0.22
Anticoagulation	60(28.8%)	48(33.3%)	12(18.8%)	0.03
Iliofem oral calcium Score*	1.37±0.84	1.24±0.73	1.66±0.99	0.003
Tortuosity Score*	1.39±0.96	1.44±0.96	1.39±0.98	0.97
Minim al IFLD, mm	7.29±1.2	7.72±1.03	6.31±0.96	<0.001
Minim al CFLD, mm	7.6±1.24	8.05±1.11	6.59±0.89	<0.001
SFAR	0.96±0.17	0.88±0.107	1.13±0.15	<0.001
Sheath >18F	103(51.9%)	41(38%)	67(64%)	0.019
Sheath outer diam eter (mm)	6.83±0.70	6.74±0.69	7.03±0.72	0.005

Baseline patient demographic and procedural characteristics

Figure 2

Table 2 Predictors for major vascular complications; univariate and multivariate regression analysis

	Univariate		Multivariate	
	HR (95% CI)	p	HR (95% CI)	p
Age	0.969(0.91-1.03)	0.327		
Female	2.146(0.76-6.03)	0.148	2.67 (0.84-8.47)	0.09
EuroSCORE	1.03 (0.92-1.16)	0.595		
Body mass index	1 (0.86-1.16)	0.99		
Diabetes	0.738 (0.20-2.67)	0.644		
PAD	1.88 (0.66-5.37)	0.236		
GFR <60 ml/min/1.73 m^2	0.64 (0.22-1.90)	0.427		
SFAR	54.66 (3.72 -802.48)	0.004	526.17 (5.98-46264.63)	0.006
Iliofemoral calcium score	1.07 (0.60-1.90)	0.81	0.73 (0.36-1.5)	0.394
Tortuosity Score	0.953 (0.57-1.59)	0.854		
CAD	0.95 (0.34-2.60)	0.922		
Late experience group	0.81 (0.29-2.19)	0.676		
Anticoagulation	0.31 (0.06-1.38)	0.123	2.69 (0.57-12.76)	0.21
Ineligibility	2.14(0.78-5.84)	0.136	2.3(0.52-10.13)	0.27
LVEF	1.02 (0.97-1.06)	0.489		

PAD, peripheral artery disease; SFAR, sheath-to femoral artery ratio; CAD, coronary artery disease; LVEF, left ventricular ejection fraction

Predictors of VASCULAR complications

Table 1

Patient	Group	Year	Type of vascular complication	Treatment strategy	Treatment Sucess
1	Ineligible	2015	VCD failure	Surgical repair	Yes
2	Ineligible	2016	Iliac Rupture	Surgery	No,Death
3	Ineligible	2016	Heamatoma,transfusion of 2 units of RBC	Manual compression	Yes
4	Ineligible	2016	CFA rupture	Graft stent	Yes
5	Eligible	2017	Heamatoma, transfusion of 3 units of RBC	Manual compression	Yes
6	Eligible	2017	Aortic dissection	Surgery	No, Death
7	Ineligible	2017	VCD failure, transfusion of 3 units of RBC	Surgical repair	Yes
8	Ineligible	2017	Iliac rupture	Graft stent	Yes
9	Eligible	2018	Annulus rupture	Surgery	No, Death
10	Eligible	2018	Right CFA occlusive dissection	Failed Stenting	No, Death
11	Eligible	2018	Heamatoma, transfusion of 3 units of RBC	Manuel Compression	Yes
12	Eligible	2018	Right CFA non- occlusive dissection	Stenting	No, Acute renal failure, Death
13	Ineligible	2018	Sheath fracture leading to failure of sheath removal	Surgery	Yes
14	Eligible	2019	Right CFA rupture, retroperitoneal hemorrhage	Surgery	Yes
15	Eligible	2019	Pseudoaneurysm requiring transfusion of 3 units of RBC	Thrombin injection	Yes
16	Eligible	2019	Heamatoma requiring to 2 units of RBC	Manuel Compression	Yes
17	Ineligible	2019	Iliac rupture	Graft stent	Yes

Vascular complications in overall patient cohort

OA-62 UNCOMPLETED, BUT SUCCESFULL CTO (CHRONIC TOTAL OCCLUSION) CASE

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Introduction: Chronic total lesion(CTO) interventions are challenging procedures with low rate success and high rate complications. But with incre- ased development of CTO related techniques and equipment the success rate of CTO interventions have improved. We present CTO case report that we could not finish as we wanted, but with satisfactory result.

Case: 63 aged male admitted to our clinic with Canadian Class 2 stable angina, refractory to optimal medical therapy. He sufferes from diabetes mellitus, hypertension as well. In his background 13 years ago he underwent CABG*3(LIMA-LAD, Ao-SVG-Cx-OM, Ao-SVG-RCA), 4 years ago PCI to Ao-SVG-Cx-OM. EchoCG revealed – LVEF 50% with inferior, posterior wall hypokinesia. Coronary angiography demonstrated total occlusion of Ao-SVG-RCA and old total occlusion of native RCA. LIMA-LAD and SVG-Cx-OM revealed no lesion and were observed collaterals to the RCA via septal branches of LAD. We decided the complaints of patient were related to RCA area and revascularization of native RCA was planned.

RCA lesion in this case considered to difficult lesions considering J-CTO score (long, calcified, >45 degree bending)(Figure 1)

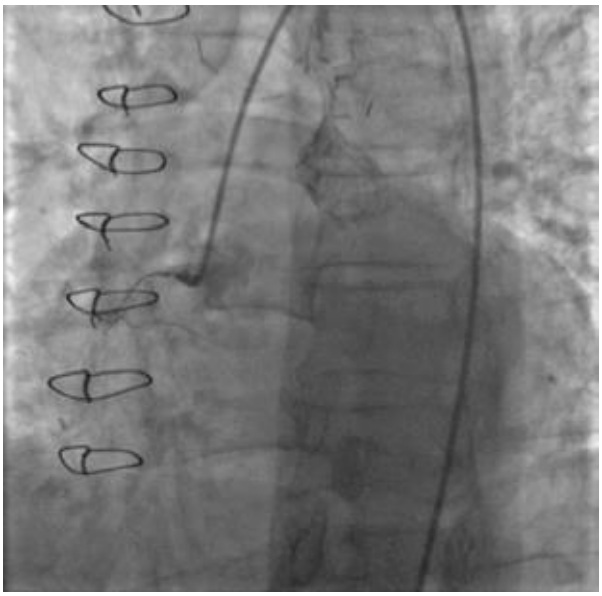
Through both femoral arteries LMCA ostium was engaged with EBU 4 6F catheter, RCA ostium with AL1 6F. Firstly we decided to pass through retrograde approach using septal collaterals. Fielder-XT was our first choice as a guidewire, we were succeded to pass to septal collaterals, then with support of microcatheter Corsair Fielder-XT guidewire was replaced with guidewire Gaya-2. With support microcatheter Corsair Gaya-2 entered to the distal part of RCA subintimally. We could not continue prosedure with retrograde approach, because wire was not in true lumen.

Then was decided to continue with anterograde approach. With support microcatheter Gaya-2 was successed go through RCA, then with 2.5x20mm compliant balloon dilated the lesions through the artery. In whole artery was observed dissection, we were not sure whether guidewire was in true lumen or in false lumen. As a last chance to cross to the true lumen we decided to do another attempt through retrograde approach. Attemption to cross the balloon was unsuccessful, with dilatation of septal collaterals with balloon was ended several Ellis Type II perforation of collaterals and myo- cardial blush. For the safety of patient was decided to complete prosedure without further attempt and to try another intervention 1-2 months later.

1 month later planned intervention was done. In CAG examination the whole RCA was dissected (Figure 2), but the flow was satisfactory, for this reason was decided not to implant stent. In 1 year follow-up the patient remains free of angina, in EchoCG LVEF is normal with no wall motion ab- normalities

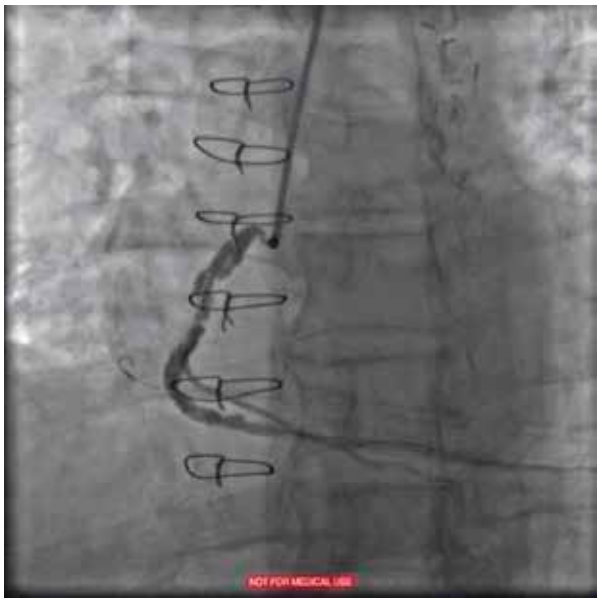
Discussion: CTO PCI is technically challenging procedure, operators must to be aware of every complication, be prepared to deal with these compli- cations and sometimes to abandon the procedure in order no to make serious complications

Figure 1.



Chronic total occlusion of NATIVE RCA(right coronary artery)

Figure 2.



After 1 month from first prosedure. The whole RCA is dissected

OA-63 CORONARY INJURY IN PENETRATING THORACIC TRAUMA

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ITRODUCTION: Penetrating cardiac injuries are life threatining injuries, usually ocur due to stabing or gunshot. Symptoms vary and depend to the type of injury and the size of the myocardial laceration. On admission patients may be stable and this may cause to overlook the cardiac injury and patient's loss.

CASE: We have reported a case with delayed presentation of coronary artery rupture due to penetrating heart trauma. A 24-year-old male patient was referred to the emergency room due to a stab injury from the left thoracic region. He was hemodinamically stable, oriented and cooperated. His blood pressure was 130/80 mmHg and heart rate was 105 pbm.

On physical examination, there were 3 stab wounds in the 3rd and 4th intercostal area.

Contrast CT scan was performed and hemothorax was detected in the left pleural cavity. No injuries were observed in the heart and large vessels. To rule out pericardial tamponade and possible cardiac injury echocardiographic examination was done. No pericardial effusion, regional wall motion abnormality or valve pathology was seen. Patient was monitored and serial ECG and troponin measurments were done. During his course patient had chest pain, dynamic ECG changes at inferior leads. Urgent angiography was planned. At angiography Intermediate artery was found totally ocluded, other coronary arteries were normal (figure 1). Percutenous revascularisation was planned and lesion was crossed with flooppy wire. After wire crossing balloon dilatation was done witf 1.5x20 mm semicompliant balloon. Balloon dilatation resulted severe leak of contrast to the pericardium (type 3 coronary rupture)(figure 2). Acute pericardial tamponade devoloped and rapid decline of blood pressure and bradycardia was observed. To block bleeding to the pericardial cavity, balloon inflation above the site of injury and agresive liquid recissutation was done. Patient was transferred to the operating room for surgigical repair of coronary rupture. Floppy wire was seen during surgery, it was noted that floppy wire crossed from the traumatically ruptured and thrombosed intermediate artery. Sapheneous vein graft interposition to the IMA was performed and the patient was taken to Intensive Care Unit. The patient was discharged after 5 days because of the stable state on follow-up.

RESULTS: Penetrating cardiac injuries may lead to myocardial infarction and this entity might present lately during the follow-up.

CONCLUSION: Although right ventricle was the frequent region of involvement, there can be injuries on valvular structures, atrial and ventricular septum and coronary arteries. Isolated coronary involvement is very rare and the clinical presentation can be insidious. We aimed to emphasise the importance of close patient monitoring and early coronary imaging in cases with possible heart trauma.

Keywords: Penetrating cardiac trauma, Isolated coronary injury, coronary artery rupture

figure 1

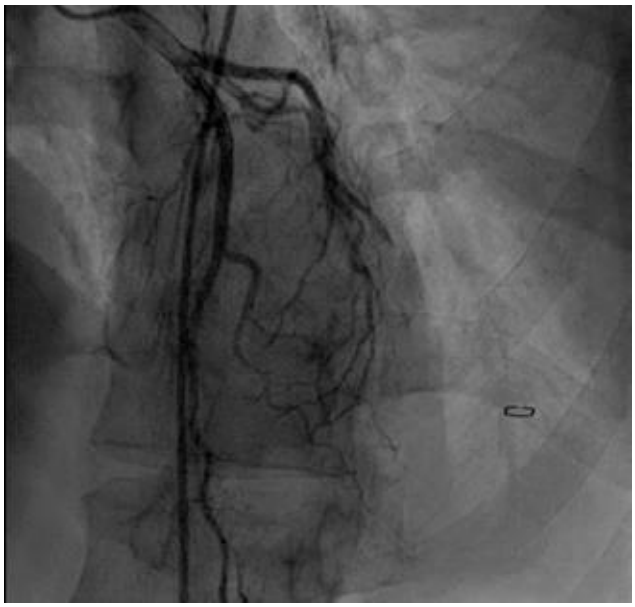
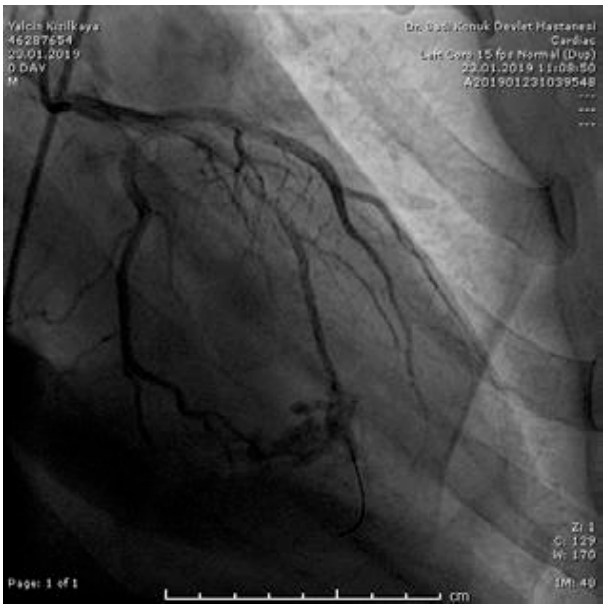


figure 2



OA-64 THE RELATIONSHIP BETWEEN HBA1C LEVEL AND ENDOTHELIAL FUNCTIONS IN CORONARY ARTERY DISEASE

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Objective: Endothelial dysfunction plays an important role in the development and prognosis of coronary artery disease. Endothelial dysfunction contributes to the development of atherosclerotic lesions and subsequent clinical signs. Flow-mediated dilation (FMD) evaluates the function of vas- cular endothelial cells. Decreased FMD was showing endothelial dysfunction that is a predictive factor for major vascular complications, including CV diseases. Decreased FMD is used as a marker of endothelial dysfunction in hyperglycemic conditions. We aimed to evaluate the effects of glycolized hemoglobin (HbA1c), which is a parameter that shows the long-term mean glycemic index, on endothelial functions in coronary artery disease.

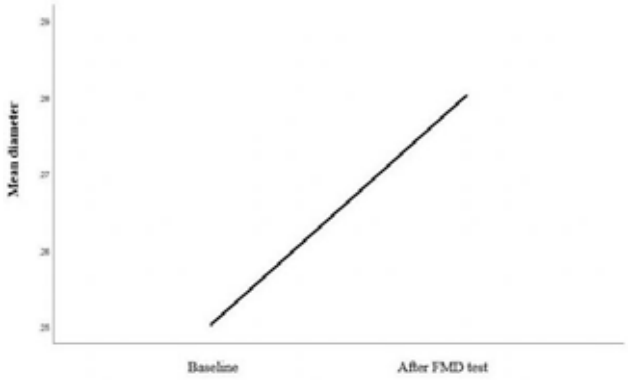
Methods: 56 patients who has coronary artery disease documented by coronary angiography were included in this study. Endothelial functions were evaluated by flow-mediated vasodilation (FMD) test. The radial artery diameter was obtained in two-dimensional images from the anterior wall to the posterior wall intima of the vessel. Patients who could not obtained a pulse from the radial artery, could not be obtained optimal doppler ultrasonog- raphic examination and who did not give consent excluded from the study.

Results: The average age of 56 patients included in this study was 61.48 ± 10.27 years. 71.4% of the patients are male and mean body mass index (BMI) is 27.52 ± 5.54 kg / m2. In the FMD test, the mean radial artery basal diameter was 25.02 (± 2.8) mm, and the mean radial artery diameter after FMD was 28.04 (± 3.3) mm. A negative correlation was observed between HbA1c levels and the percentage change in artery diameter that was showed endothelial functions (r = -0.306, p = 0.022).

Conclusion: In coronary artery disease, HbA1c levels that showing long-term mean glycemic index are an independent factor in endothelial dysfunc- tion.

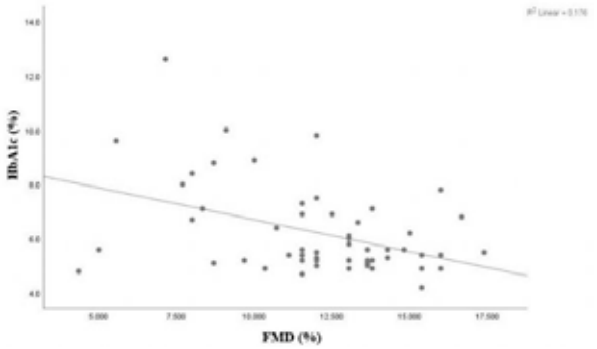
Keywords: Coronary artery disease, endothelial function, HbA1c

Diameter change in the artery by flow-mediated vasodilation test.



The mean radial artery basal diameter was 25.02 (± 2.8) mm and after the FMD test the mean radial artery diameter was 28.04 (±3.3) mm (p<0.001).

Relationship between HbA1c levels and endothelial functions



There is a poor NEGATIVE correlation between HbA1c LEVELS and the percentage diameter change in artery that was showing endothelial functions in the FMD test (r = -0.306, p = 0.022).

Clinical and demographic characteristics of the patients

Age, year	61.48±10.27
Male sex, n (%)	40 (71.4)
BMI (kg/m2)	27.52±5.54
Systolic BP, mmHg	142.59±20.13
Heart rate, /dk	75.73±13.28
NYHA class I, n (%)	25 (44.6)
Smoking, n (%)	13 (23.2)
Alkol abuse, n (%)	11 (19.6)
Hypertension, n (%)	46 (82.1)
Diabetes, n (%)	24 (42.9)
Hyperlipidemia, n (%)	22 (39.3)
Creatinine, mg/dl	1.06 (± 0.85)
LDL, mg/dl	100.57 (±38.79)
HbA1c, %	% 6.22 (±1.64)
LVEF, %	53.46 (±9.44)
LA diameter, cm	3.88 (±0.53)

OA-65 THE C-REACTIVE PROTEIN TO ALBUMIN RATIO PREDICTS POOR PROGNOSIS IN PATIENTS WITH HEART FAILURE AND MID-RANGE EJECTION FRACTION

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Objective: Heart failure with mid-range ejection fraction (HFmrEF) has recently been identified as a new heart failure spectrum. The role of inflamma- tory markers on clinical outcomes and prognosis was well studied in patients with heart failure with preserved and reduced ejection fraction. However, impact of C-reactive protein (CRP) and serum albumin on clinical outcomes of HFmrEF is not well known. We therefore aimed to assess the predictive value of CRP to albumin ratio (CAR) in patients with HFmrEF.

Methods: We retrospectively studied 287 adult patients with HFmrEF admitted to the cardiology outpatient unit between March 2016 and March 2018. Echocardiographic, laboratory data and medical record were analyzed. The primary composite endpoint of the study was all-cause mortality or heart failure hospitalization through two years.

Results: The mean age of the patients was 65.1 ± 10.1 years (male: 58.2%) and 68 (23.7%) reached the primary endpoint at two years of follow-up. Compared to patients without mortality or heart failure-related hospitalization, patients who reached the primary endpoint during follow-up were older, had higher N-terminal pro-B-type natriuretic peptide (NT-proBNP) and higher CAR levels at study entry (Table). In multivariate regression analysis, CAR remained an independent predictor (hazard ratio: 1.452, 95% confidence interval 1.120 – 2.038) of primary endpoint together with higher NT-proBNP levels. The predictive performance of CAR, CRP, and albumin was compared by receiver operating characteristic curve analysis. CAR surpassed CRP and albumin in predicting primary composite endpoint. CAR > 6.8 predicted primary endpoint with sensitivity and specificity of 87.4% and 52.2%, respectively.

Conclusions: To the best of our knowledge, this is the first study which demonstrates that higher CAR is a predictor of adverse outcomes in patients with HFmrEF. Inflammation may play an important role in prognosis of HFmrEF.

Keywords: Albumin, C reactive protein, heart failure with mid-range ejection fraction, outcomes

Table: Characteristics of participants who reached and did not reach the primary composite endpoint

	With events (n=68)	Without events (n=219)	p value
Gender (male), n (%)	40 (58.8)	127 (58)	NS
Age (years)	69 (64 – 79)	62 (55 – 73)	<0.001
Pulmonary crepitations, n (%)	25 (36.7)	44 (20.1)	<0.001
Orthopnea, n (%)	30 (44.1)	55 (25.1)	0.001
NYHA III/IV symptoms, n (%)	32 (47)	48 (21.9)	<0.001
Smoking, n (%)	18 (26.4)	55 (25.1)	NS
Comorbidities			
Diabetes mellitus, n (%)	20 (29.4)	61 (27.8)	NS
Hypertension, n (%)	49 (72)	154 (70.3)	NS
Chronic kidney disease, n (%)	13 (19.1)	38 (17.3)	NS
Coronary artery disease, n (%)	47 (69.1)	144 (65.7)	NS
Cerebrovascular disease, n (%)	6 (8.8)	18 (8.2)	NS
Laboratory data			
NT-proBNP, pg/ml	1182 (532 – 3714)	531 (232 – 1422)	<0.001
Serum creatinine, mg/dl	0.91 (0.7 – 1.1)	0.9 (0.7 – 1.0)	NS
Hemoglobin, g/dl	12.6 (11.5 – 14.4)	12.7 (11.7 – 14.5)	NS
Serum uric acid, mg/dl	5.7 (4.9 – 6.8)	5.6 (4.7 – 6.7)	NS
CRP/albumin ratio x 100	5.5 (3 – 9.7)	2.6 (1.6 – 5.1)	<0.001
LVEF, %	44 (40 – 46)	45 (41 – 46)	NS

Abbreviations: CRP, C-reactive protein; LVEF, Left ventricle ejection fraction; NT-proBNP, N-terminal pro-B-type natriuretic peptide; NYHA, New York Heart Association; NS, non-significant.

OA-66 RELATION BETWEEN LYMPHOCYTE/C REACTIVE PROTEIN RATIO AND CORONARY THROMBUS BURDEN IN YOUNG STEMI PATIENTS

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Introduction: Intracoronary thrombus burden is associated with some adverse events and poor prognosis in patients with ST-segment elevation myocardial infarction (STEMI). Identifying the causes that increase the intracoronary thrombus burden can help in management of treatment. In this study, we investigated the ability of lymphocyte / CRP ratio to predict coronary thrombus burden in young STEMI patients.

Method: 210 STEMI patients under the age of 45 who underwent primary percutaneous coronary intervention between June 2016 and June 2020 were included in the study. Angiographic coronary thrombus burden was performed according to the classification of 'thrombolysis in myocardial infarction (TIMI)'. The patients were divided into two groups as low thrombus burden (LTB) and high thrombus burden (HTB).

Results: The lymphocyte / CRP ratio was significantly lower in those with HTB than LTB (171.8 ± 66.1, 75.4 ± 35.7, p <0.001). In the multivariate logistic regression analysis, a risk factor independent of thrombus load pain was found with a low lymphocyte / CRP ratio (odds ratio: 1.389, 95% CI: 1.017-1.599; p <0.05).

Conclusion: As a result, the low lymphocyte / CRP ratio is an independent parameter that predicts high coronary thrombus burden in young patients presenting with STEMI with percutaneous coronary intervention.

Keywords: STEMI, Coronary thrombus burden, Lymphocyte/CRP ratio

TABLE.1

Table 1. Demographic and laboratory findings

Variables	LTB (n=85)	HTB (n=125)	p value
Age	40.6 ± 2.3	39.6 ± 2.8	0.058
Gender, Male, n (%)	51 (60)	58 (46)	0.661
HTN, n (%)	45 (52)	49 (39)	0.411
DM, n (%)	31 (36)	28 (22)	0.061
Hyperlipidemia, n (%)	14 (16)	15 (12)	0.549
Smoking, n (%)	42 (36)	46 (36)	0.413
WBC, 10^3 uL	6.5 ± 3.2	6.3 ± 1.6	0.152
Neutrophil, 10^3 uL	4.5 ± 2.4	4.1 ± 2.1	0.124
Lymphocyte, 10^3 uL	1.1 ± 0.5	1.2 ± 0.6	0.103
Monocyte, 10^3 uL	0.6 ± 0.3	0.6 ± 0.3	0.750
Platelet, 10^3 uL	245 ± 83	233 ± 75	0.337
Hemoglobin, g/dl	12.8 ± 1.7	12.7 ± 1.6	0.354
Glucose, mg/dl	99.0 ± 9.5	96.5 ± 12.2	0.566
Aspartate aminotransferase, IU/l	28.9 ± 7.6	24.7 ± 8.7	0.135
Alanine aminotransferase, IU/l	28.5 ± 9.4	25.2 ± 15.5	0.278
Creatinin mg/dl	0.85 ± 0.25	0.89 ± 0.22	0.875
LDL cholesterol, mg/dL	91.8 ± 16.1	75.4 ± 15.7	0.085
CRP, mg/L	6.4 ± 3.3	15.9 ± 2.8	**<0.001**
Lymphocyte / CRP ratio	171.8 ± 66.1	75.4 ± 35.7	**<0.001**

DM: Diabetes Mellitus; HTN: Hypertension; LDL, Low density lipoprotein; CRP: C-reactive protein

TABLE.2

Table 2. Multivariate logistic regression analysis showing independent thrombus burden predictive variables

Variables	Odds Ratio (95% CI)	HTB (n=125)	p value
Age	1.022	(0.998– 1.147)	0.130
Hypertension	1.069	(0.879– 1.175)	0.121
Diabetes Mellitus	1.039	(1.011 – 1.192)	0.091
Lymphocyte/CRP ratio	1.398	(1.017– 1.599)	**0.005**
LDL, mg/dL	1.008	(0.998– 1.019)	0.110
WBC, (10^3 µl)	1.017	(0.934 – 1.108)	0.690
Platelet (10^3 µl)	1.001	(0.997– 1.054)	0.681

OA-67 RELATIONSHIP BETWEEN MPV / PLT RATIO IN PATIENTS WITH PATENT FORAMEN OVALE

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University of Health Sciences Diskapi Yildirim Beyazit Education and Research Hospital

Objectives: Patent foramen ovale (PFO) is frequently seen with cryptogenic stroke and is considered to be a risk for stroke in patients with recurrent stroke attacks. Mean platelet volume / platelet count (MPV / PLT) ratio is the new systemic biomarker in the evaluation of platelet function and activity. The aim of this study is to compare MPV / PLT ratio in patients in the PFO and control groups.

Method: This study was designed as a retrospective study based on medical records between January 2015 and June 2019. This study included 55 patients with PFO diagnosed with transesophageal echocardiography (31 males, mean age 32 ± 12 years) and 55 healthy controls, including volun- teers of similar age and sex. Complete blood count values of all patients were analyzed and MPV / PLT ratio was calculated.

Results: There was no statistically significant difference between the two groups in terms of basic clinical features. MPV / PLT ratio was significantly higher in patients with PFO than in controls (0.038 ± 0.01 and 0.033 ± 0.008, p = 0.03). In the logistic regression analysis, it was shown that there was a relationship between the presence of PFO and MPV / PLT ratio (β = 40.7, Exp (B) = 4.903, p = 0.04).

Conclusion: In this study, we found that patients with PFO had a higher MPV / PLT ratio and the presence of PFO was significantly associated with MPV / PLT ratio. This result suggests that MPV / PLT ratio may be a predictor of the risk of cryptogenic stroke in patients with PFO.

Keywords: Patent foramen ovale, platelet, mean platelet volume

Table. Basal characteristics of groups

	PFO group (n=55)	Control group (n=55)	P value
Age (years)	32.4 ± 12.8	34.8 ± 13.3	0.3
Man, n (%)	31 (48)	33 (51)	0.8
LVEF, (%)	62.7 ± 2.7	63.0 ± 2.4	0.5
LA diameter(cm)	3.2 ± 0.4	3.1 ± 0.3	0.4
lvd diameter(cm)	5.4 ± 6.6	4.3 ± 0.3	0.3
sPAP (mmHg)	31.5 ± 6.2	30.7 ± 5.9	0.7
Glucose (mg/dL)	85.3 ± 13.8	87.5 ± 9.4	0.3
Hemoglobin (g/dL)	14.3 ± 1.8	14.3 ± 1.4	0.8
Leukocyte count (mcL)	7.4 ± 1.8	7.0 ± 1.4	0.2
Platelet count (mcL)	244.9 ± 68	257.7 ± 58	0.3
MPV (fl)	8.6 ± 1.0	8.3 ± 0.7	0.1
MPV/platelet count (mcL)	0.038 ±0.01	0.033 ± 0.008	0.03

LVEF: left VENTRICULAR ejection fraction, LA: left atrium, LVD: left VENTRICULAR diastolic, sPAP: systolic pulmonary pressure, MPV: mean platelet VOLUME

OA-68 ASSOCIATION OF MONOCYTE / HDL RATIO WITH PROGNOSIS IN PATIENTS WITH PULMONARY EMBOLISM

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Background: Pulmonary embolism is a thromboembolic disease with high morbidity and mortality rates. Ratio of Monocyte-to-HDL cholesterol (MHR) could be present the inflammatory status of patients. The aim of this study was to research the association of MHR, which is a new marker in predicting the prognosis of patients with pulmonary embolism.

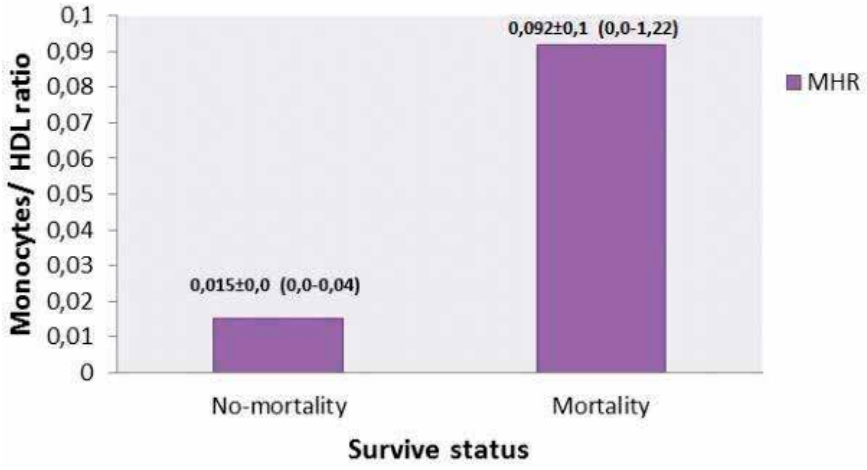
Methods: Patients who were followed up in our hospital with the diagnosis of pulmonary embolism between October 2015 and June 2020 were inclu- ded in the study. Patients' demographic data such as age and gender, vital findings, comorbid diseases, lipid profiles, renal function tests, hemogram outcomes at admission, electrolyte values and cardiac markers were recorded and analyzed. Patients' pulmonary embolism (PE) clinical classes were determined. The correlations between monocyte/HDL-cholesterol ratio and PE severity were analyzed.

Results: A total of 136 patients followed up in our hospital due to PE were included in the study. Of all patients 38.2% (n=52) were diagnosed with massive and 61.8% (n=84) non-massive PE. There were statistically differences between Non-massive and massive PE in terms of Chronic renal failure, Troponin, D-dimer, HDL, creatinine, White Blood Cell, Monocytes, Monocytes/ HDL ratio, sPAB and Survive status (p=0.035, p=0.004, p=0.046, p=0.000, p=0.008, p=0.031, p=0.001, p=0.000, p=0.000, and p=0.000, respectively). There was a positive correlation between PE severity and chronic renal failure, Troponin, D-dimer, HDL, creatinine, White Blood Cell, Monocytes, MHR, sPAB and Survive status. Of all patients included in this study, 37 patients (71.2%) died in the massive group and 13 patients (15.5%) were died in the non-massive group. However, MHR was higher in patients who died (0.092±0.17) compare to survivor (0.015±0.00) (p=0.000).

Conclusions: Monocyte-to-HDL-cholesterol ratio, which is an inexpensive marker easily available in all centers, can be used in acute pulmonary embolism for PE severity status and mortality status.

Keywords: Pulmonary embolism, prognosis, HDL, mortality

Figure 1. Comparison of MHR values between patients with Pulmoner Emboli mortality and non-mortality



Mean±sd (min-max), p=0.000 MHR: Monocytes/ HDL ratio HDL: High density lipoprotein

Table 1. The Comparison of patients' socio-demographic, clinical and laboratory parameters.

Parameters	Non-massive (N=84, 61.8%) Mean or Median (min-max), n (%)	Massive (N=52, 38.2%) Mean or Median (min-max), n (%)	P
Chronic renal failure	13 (15.5%)	16 (30.8%)	0.035
Troponin (pg/mL)	100.5±194.3 (0.0-920.0)	224.3±391.6 (4.3-1933.0)	0.004*
D-dimer (pg/dL)	5.42±3.5 (0.1-14.2)	7.11±3.8 (0.1-15.8)	0.046
HDL (mg/dL)	43.3±12.1 (9.0-82.0)	31.5±10.1 (12.0-64.0)	0.000*
Creatinine (mg/dL)	1.00±0.8 (0.3-7.4)	1.24±1.0 (0.5-7.0)	0.008*
White Blood Cell (103/µL)	10.26±4.7 (1.0-29.3)	12.48±1.0 (4.8-45.7)	0.031
Monocytes (109/L)	0.73±0.31 (0.0-1.9)	2.06±3.9 (0.3-27.0)	0.001*
Monocytes/ HDL ratio	0.019±0.01 (0.00-0.06)	0.083±0.17 (0.00-1.22)	0.000*
sPAB (mmHg)	34.47±7.6 (20-55)	54.45±11.8 (30-90)	0.000*

**: Mann Whitne-U test used. COPD: Chronic OBSTRUCTIVE pulmonary disease, HDL: High density lipoprotein, LDL: Low density lipoprotein, CRP: C-REACTIVE protein. sPAB: Systolic pulmonary artery pressure.*

OA-70 EFFECTS OF THE ANTI-HYPERTENSIVE AGENTS ON CHOROIDAL THICKNESS IN NEWLY DIAGNOSED HYPERTENSION PATIEN

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Objective: To investigate the effect of hypertension and agents used for hypertension treatment on choroidal thickness.

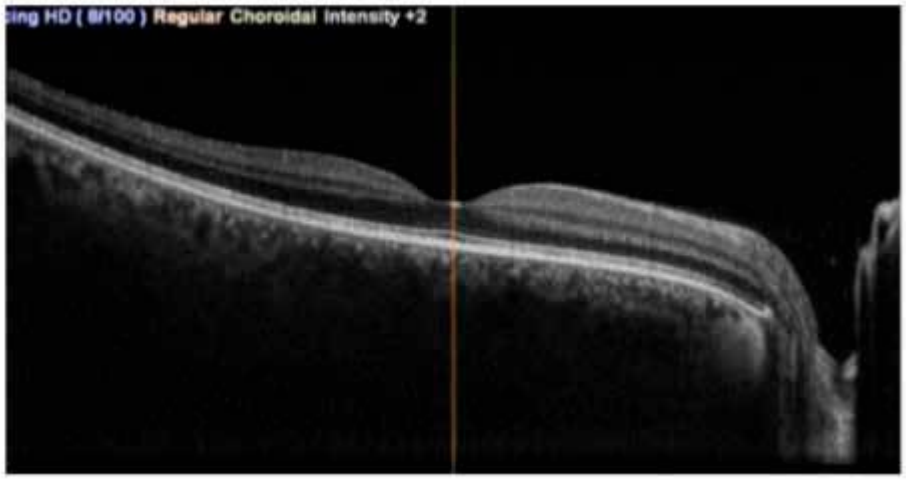
Material-Method: The study includes 64 newly diagnosed hypertension patients and 40 age-matched healthy subjects. 24 of the hypertension patients received angiotensin converting enzyme inhibitor, 20 of them received angiotensin receptor blocker, 20 of them received beta-blocker for treatment. Choroidal thicknesses of the subjects were measured using spectral domain optical coherence tomography in the innitial examination day and measurements repeated one month later.

Results: Mean subfoveal choroidal thickness of control group was 275.64±22.3 µm and mean subfoveal choroidal thickness of hypertension patients was 238.4±22.4 µm. Choroidal thickness was significantly thinner in hypertension group than the control group (p<0.01). Mean subfoveal choroidal thickness was 261.3±21.6 µm in patients receiving angiotensin converting enzyme inhibitor, 259.7±21.3 µm in patients receiving angiotensin receptor blocker and 240.4±24.57 µm in patients receiving beta blocker. There were found statistically significant increase in subfoveal choroidal thickness in patients receiving angiotensin converting enzyme inhibitor and angiotensin receptor blocker (p=0.004 and p=0.002, respectively). But the differences in patients receiving beta-blockers was not stattistically significant (p=0.67).

Conclusion: Hypertension patients had thinner choroidal thickness than healthy subjects. In short-term, choroidal tickness got thickened in hyper- tension patients receiving angiotensin converting enzyme inhibitor and angiotensin receptor blocker. However, there was no significant difference on choroidal thickness in patients receiving beta-blockers agents. These effects should kept in mind while monitoring the patients who have choroiretinal diseases such as hypertensive retinopathy, diabetic retinopathy anda ge-related macular degeneration, etc.

Keywords: Angiotensin converting enzyme, Angiotensin receptor blocker, Choroidal thickness, Hypertension

Figure 1



Spectral domain optical coherence tomography image for EVALUATING the SUBFOVEAL choroidal thickness.

Table 1. Demographic and clinical data of the study population.

	Hypertensive Patients	Controls	P value
Age (years)	62.1± 9.9	60.5± 8.9	0.169
Gender (male)	46.6%	53.0%	0.29
Body mass index (kg/m2)	27.1±5.2	26.3±4.0	0.241
Smokers (n-%)	32%	29%	0.012
Duration of hypertension (years)	±5.8±2.4	-	
Systolic blood pressure (mmHg)	143.8±21.2	119.2±16.2	<0.001
Diastolic blood pressure (mmHg)	91.0±11.3	81.6±8.5	<0.001

OA-71 SYSTOLIC BLOOD PRESSURE RECOVERY IS DELAYED IN PRIMARY HYPERTENSION PATIENTS AFTER EXERCISE TEST

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Objective: It has long been acknowledged that both heart rate and systolic blood pressure (SBP) increase with exercise test and are risk factors for the future development of hypertension. However, as far as we have researched, there are limited studies on the assesment of systolic blood pressure recovery ratio (SBPRR) after exercise test in primary hypertension patients. The aim of present study was to compare SBPRR in both primary hyper- tension patients and healthy normotensive subjects.

Method: 107 patients with primary hypertension and 105 healthy normotensive subjects as control group were included in the study population. All participants underwent assessment of treadmill exercise testing. With each stage of exercise and recovery, data on symptoms, heart rate, and blood pressure (by indirect arm-cuff sphygmomanometry) were collected. SBPRR was defined as the SBP after 3 minutes recovery divided by SBP at peak exercise. Collected datas of both primary hypertension patients and healthy normotensive subjects were compared.

Results: The main demographic and laboratory findings were similar among two groups. From the exercise test findings; peak heart rate, heart rate recovery and peak SBP were statistically similar for each groups. But; SBP recovery was significantly lower in primary hypertensives versus healthy normotensives and BPRR was significantly lower in healthy normotensives versus primary hypertensives (Table 1).

Conclusion: The major finding of our study was that SBP recovery after termination of exercise was delayed; this is very important and requires an explanation. The normal response to end of exercise is an increase in parasympathetic tone and a reduction in sympathetic tone. This situation allows the heart rate and blood pressure to return to baseline. There was no impairment in the heart rate recovery among groups, thus the parasympathetic system appears intact for each groups. The failure to withdraw sympathetic tone would cause continuing vasoconstriction and delayed SBP recovery. Primary hypertension is a state of sympathetic hyperactivity and this state explains delayed SBP recovery.

Our study findings may provide strategies to better diagnose and manage primary hypertension. The occurrence of delayed SBP recovery after exercise test might diagnose the primary hypertension.

Keywords: Exercise test, systolic blood pressure recovery ratio, heart rate, primary hypertension

Table 1. Demographic, clinical, laboratory and exercise test findings of the study population

Variable	Primary Hypertensive Patients n:107	Healthy Normotansive Controls n:105	p
Age (years)	60 ± 13.5	57 ± 12.7	0.351
Gender (female), n (%)	52 (49)	51 (49)	0.879
Body mass index, kg/m2	27.4 ± 3.1	25.3 ± 1.9	0.141
Hypertension, n (%)	107 (100)	0 (0)	<0.001
Diabetes mellitus, n (%)	9 (8)	6 (6)	0.154
Hyperlipidemia, n (%)	13 (12)	10 (10)	0.201
Current smoker, n (%)	29 (27)	25 (24)	0.247
Antihypertensive drug use, n (%)	90 (84)	0 (0)	<0.001
Left ventricle ejection fraction, %	55 ± 4.91	58 ± 5.22	0.518
Plasma glucose, mg/dl	123 ± 39.6	125 ± 35.2	0.443
Creatinin, mg/dl	0.82 ± 0.61	0.75 ± 0.42	0.149
Hemoglobin, g/dl	12.9 ± 1.7	13.0 ± 1.5	0.826
White blood cell, $10^3/mm^3$	8.1 ± 1.6	7.8 ± 1.4	0.437
Platelet, $10^3/mm^3$	272.4 ± 43.4	297.1 ± 55.2	0.253
Resting heart rate, pulse/minute	80.4 ± 11.9	78.6 ± 10.3	0.351
Peak heart rate, pulse/minute	164.3 ± 14.3	161.7 ± 16.6	0.423
Heart rate recovery, pulse/minute	39.2 ± 9.1	40.7 ± 8.9	0.842
Resting systolic blood pressure, mmHg	134.3 ± 16.2	127.7 ± 18.6	0.142
Peak systolic blood pressure, mmHg	175.3 ± 18.4	168.4 ± 16.2	0.089
Systolic blood pressure recovery, mmHg	17.1 ± 6.9	34.7 ± 7.3	<0.001
Systolic blood pressure recovery ratio	0.91 ± 0.08	0.78 ± 0.12	<0.001

OA-72 THE ROLE OF APELIN IN PATIENTS WITH RESISTANT HYPERTENSION

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Background: Despite advances in the treatment of hypertension, it continues to be a major health problem which accounts for 9.4 million deaths worldwide every year. The term resistant hypertension (RH) represents blood pressure measurements that remain above goal despite concurrent use of three antihypertensive agents of different classes, one of which should be a diuretic. The exact mechanism behind RH is unclear, it is most likely multifactorial.

Aim: In our study we aimed to examine the relation between serum apelin level and RH.

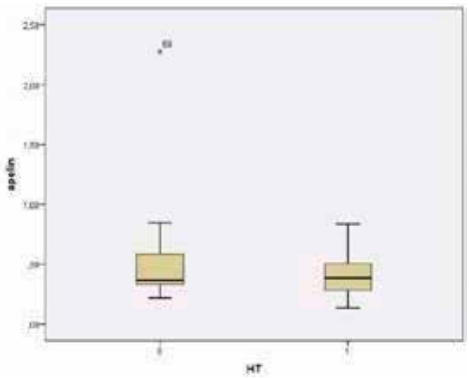
Method: From March 2015 to May 2016, 174 patients with RH were evaluated and 57 of them were found eligible and accepted to participate in our study. The control group consisted of 27 normotensive healthy individuals. 2 consecutive office blood pressure measurements as well as patients' own records were evaluted for eligibility. Patients with diabetes mellitus, left ventricular ejection fraction less than 45%, malignancies, chronic inflam- matory diseases, severe renal or liver dysfunction and pregnancy were excluded.

Results: Among 84 patients enrolled in the study, 27 were controls (mean age: 52,2±9,1, 20 female [%74,1]) and 57 with resistant hypertension (mean age: 56,3±10,6, 33 female [57,9%]). The mean plasma apelin level of patients with RH was 0,51±0,40 ng/ml and controls 0,40±0,15 ng/ml (p=0,08, Figure-1). Glucose levels in RH patients were significantly higher compared to controls. (99,3±14,7 mg/dl vs 89,6±8,1 mg/dl p=0,002). There was no statistically significant difference in urea, eGFR, total cholesterol, HDL-C, LDL-C and triglyceride levels between the two groups.

Conclusion: In conclusion, we did not find a significant difference in apelin levels in patients with RH compared to normotensives. We believe that RH differs from other forms of hypertension by pathogenesis, prognosis and lack of efficient therapies. The complex interplay of different etiologies may play a role and further large scale studies are needed in order to clarify the possible role of apelin.

Keywords: apelin, resistant hypertension, multi-antihypertensive drug

Figure 1: Apelin values in both group



The biochemical characteristics, clinical and demographic features of the study population

	HT (n=57)	Control (n=27)	p value
Age, years	56,3±10,6	52,2±9,1	0,09
Female gender	33 (57,9%)	20 (74,1%)	0,15
Body mass index, kg/m2	30,1±4,9	27,3±3,8	0,01
Any vascular disease	20 (36%)	4 (14,8%)	0,05
Left ventricular hyperthrophy	21 (37%)	1(3,7%)	0,001
ACE-I usage	22 (38,6%)	0(0%)	<0,001
ARB usage	34 (59,6%)	0(0%)	<0,001
Beta bloker usage	39 (68,4%)	4 (14,8%)	<0,001
Ca channel bloker usage	38(66,7%)	0(0%)	<0,001
Thiazide diuretic usage	54 (94,7%)	0(0%)	<0,001
Alpha bloker usage	8 (14%)	0(0%)	0,04
Other antihypertensives	4(7%)	0(0%)	0,16
Apelin level (ng/mL)	0,40±0,15	0,51±0,40	0,08
Serum glucose level (mg/dL)	99,3±14,7	89,6±8,1	0,002
Urea level (mg/dL)	133,6±66,5	117,4±41,8	0,29
eGFR (ml/min/1.73 m2)	123,1±45,6	129,2±40,2	0,55
Total cholesterol (mg/dL)	198,8±47,1	190,9±40,6	0,50
LDL (mg/dl)	124,6±39,3	114,1±37,6	0,29
HDL (mg/dl)	47,1±12,1	49,6±17,1	0,49
Triglyceride (mg/dL)	133,6±66,5	117,4±41,8	0,29

OA-73 THE RELATIONSHIP BETWEEN VITAMIN D DEFICIENCY AND FUNCTIONAL CAPACITY IN PULMONARY ARTERIAL HYPERTENSIO

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Background and Aim: Recent studies have indicated a much broader role to Vitamin D than simply the regulation of calcium metabolism alone. Vitamin D likely confers physiologically relevant pleiotropic functions that include cardioprotective and immunomodulatory effect.therefore, vitamin d deficiency is thought to have negative consequences in cardiovascular diseases.In this study, we aimed to increase the effect of vitamin d levels on functional capacity in PAH patients.

Method: A total of 35 PAH patients were prospectively examined during hospital admissions. Mean age of patients was 64±12 years (14% males, 86% females). 25-hydroxyvitamin D3 level below 20 ng/ml was defined as vitamin D deficiency.

Results: The mean vitamin D values of the patients included in the study were determined as 17.69 ng/ml. Vitamin D deficiency was present in 20 patients (57.1%).The presence of NYHA class III-IV is more common in the group with vitamin D deficiency (65% vs 20%, p=0.021. 6 minutes walking distance is lower than those who are not in the group with vitamin d deficiency [196(60-460) vs 333(140-480) meter, p<0.01]. In addition, NT-proBNP values were higher in the vitamin d deficient group [3870 (20-13254) vs 474 (35-3697) pg/ml, p<0.01]. Table 1 presents all of the other baseline clinical characteristics of the patients. In the correlation analysis, a statistically significant positive correlation was found between vitamin D levels with 6-MWD. In addition, a statistically significant negative correlation was found between vitamin D levels with NYHA functional class, BORG score and NT-proBNP levels.

Conclusions: In this study, the negative effect of vitamin D deficiency on functional capacity was shown for the first time in the literature in PAH patients. Vitamin D may have an important role in PAH patients with its anti-inflammatory and cardioprotective effect. there is a need for more comp- rehensive studies to explain this situation.

Keywords: pulmonary arterial hypertension, vitamin D, functional class

Table 1. Baseline characteristics of study patients

	Patients with vitamin D deficiency (n:20)	Patients without vitamin D deficiency (n:15)	p Value
Age (year)	60.8 ± 15.0	67.5 ± 9.7	0.137
Female (n,%)	17 (85%)	13 (86.7%)	0.640
Atrial Fibrillation (n,%)	10 (50%)	8 (53.3%)	0.558
Diabetes Mellitus (n,%)	6 (30%)	5 (33.3%)	0.560
NYHA III-IV (n,%)	13 (65%)	3 (20%)	0.021
Use of furosemide (n,%)	16 (80%)	10 (66.7%)	0.451
Presence of Right Heart Failure Signs (n,%)	14 (70%)	4 (26.7%)	0.028
Ejection Fraction (%)	55 ± 4	56 ± 3	0.792
sPAP (mmHg)	72.9 ± 21.2	54.7 ± 15.2	<0.01
TAPSE (mm)	15.7 ± 3.2	20.0 ± 3.2	<0.01
Hemoglobin (mg/dl)	13.9 ± 2.2	12.4 ± 1.9	0.054
Creatinine (mg/dl)	1.0 ± 0.5	0.9 ± 0.3	0.824
Sodium (mmol/l)	139.7 ± 4.1	138.9 ± 3.8	0.545
Calcium (mmol/l)	8.9 ± 0.6	9.1 ± 0.5	0.373
6-MWD (m)	196 (60-460)	333 (140-480)	<0.01
BORG Score	14.9 ± 3.2	13.0 ± 2.9	0.078
NT-proBNP (pg/ml)	3870 (20-13254)	474 (45-3697)	<0.01

NYHA; New York Heart Association, sPAP; systolic pulmonary arterial pressure, TAPSE; tricuspid annular plane systolic excursion, 6-MWD; 6 minutes walking distance

OA-74 PROGNOSTIC NUTRITIONAL INDEX PARADOX IN ACUTE MYOCARDIAL INFARCTION

Hatice Tolunay

Objective: Previous studies have shown that the prognostic nutritional index (PNI) calculated based on serum albumin level and lymphocyte count may be an independent prognostic factor for mortality in patients with ST elevation myocardial infarction (STEMI). We evaluated the relationship between PNI and lipid parameters, Framingham risk scale and peak troponin levels in patients presenting with myocardial infarction to clarify the possible mechanisms of this prognostic marker.

Methods: 100 patients who came to our hospital's emergency department with chest pain and underwent successful percutaneous coronary in- tervention in the first 12 hours of chest pain with the diagnosis of STEMI were included in the evaluation. Patients whose serum albumin level and lymphocyte count data were missing and patients with known malignancy or active inflammatory disease were excluded from the study. PNI was calculated as 10 serum albumin (g / dL) + 0.005 total lymphocyte count (per mm3). The optimal cutoff value for the PNI was calculated by applying a receiver operating curve (ROC) analysis to test all possible cutoffs that would predict the risk stratification after myocardial infarction. A PNI of 46,75 was identified through a ROC analysis as an optimal cutoff value.

Results: 88% of the patients were male and 12% were female. The average age was 52.96 ± 7.49. Presence of hypertension was 56%, presence of diabetes mellitus 40%, smoking (active) 44%. Single-vessel disease was detected in 36% of patients, 2-vessel disease in 24% and 3-vessel disease in 40%. Anterior MI rate was 44%, inferior MI 48% and other MI rate 8%. The relationship between PNI max troponin level was insignificant (p: 0.423). According to MI localization, PNI averages were in anterior MI (47.84 ± 2.7), inferior MI (50.46 ± 3.88) and other MIs (46.42 ± 1.96) and there was no significant difference between them. PNI was significantly lower in patients with 3- vessel disease (p: 0.001). Patients with a high Framingham risk score had a significantly lower PNI(p: 0.012). In terms of lipid parameters, there is a statistically significant relationship between PNI, triglyceride level (p: 0.024) and HDL (p: 0.016).

Conclusion: There is a significant relationship between PNI and Framingham risk score, number of vessels with significant stenosis, triglyceride and HDL levels. The relationship between acute STEMI and PNI prognosis described in previous studies may be related to these parameters. The impor- tance of nutritional status was emphasized in these studies. However, it should not be forgotten that the parameters used when calculating PNI are the parameters that act as the acute phase reactant and which we assume may vary depending on the severity of the current process. It is therefore obvious that it is associated with prognosis. To associate this with the patient's nutritional status, it is necessary to plan studies with albumin and lymphocyte values of patients at least 48 hours before acute MI.

Keywords: Prognostic nutritional index, STEMI, Framingham risk score

Relationships between the prognostic nutritional index and clinical parameters

PNI	P Value
Framingham risk score	p:0.012
MI localization Anterior MI PNI (mean):47.84±2.72 Inferior MI PNI (mean):50.46±3.88 Other MI PNI (mean):45.92±1.96	p:0.064
Number of vessels 1-vessel PNI (mean):50.92±3.32 2-vessel PNI (mean):51.58±4.50 3-vessel PNI (mean):45.85±2.91	p:0.001
Peak troponin value	p:0.423
Total cholesterol	p:0.159
Triglyceride	p:0.024
Low-density lipoprotein	p:0.070
High-density lipoprotein	p:0.016

Table 1

OA-75 IMPAIRED GLUCOSE TOLERANCE IS ASSOCIATED WITH COMPLEXITY OF PERIPHERAL ARTERY DISEASE

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Background and Aim: Impaired glucose intolerance (IGT) is an indicator of poor tissue response to insulin and is accepted as a pre-diabetic state. IGT has been associated with increased cardiovascular risk and accepted as a continuous risk factor for coronary artery disease. IGT was determined almost one third of the non-diabetic PAD patients in previous studies. However, the effects of IGT in patients with PAD have not been well established. In the present study, we aimed to investigate the association of IGT with Trans-Atlantic Inter-Society Consensus (TASC) II classification which deter- mines anatomic distribution and lesion complexity in patients with PAD.

Material-Methods: We retrospectively reviewed the medical records of consecutive patients admitted to the cardiology department of our hospital. 105 patients with angiographically proven PAD, who underwent OGTT due to impaired fasting blood glucose, were included in the study. 75 g oral glucose tolerance test (OGTT) was performed for diagnosis of IGT. The complexity of PAD was defined according to TASC II (Trans-Atlantic Inter-So- ciety Consensus document) criteria from conventional peripheral angiograms by a cardiologist who was blinded to OGTT results. TASC C+D patients constituted the complex PAD group and were compared to TASC A+B patients.

Results: The mean age of the study population was 60.8 ± 11.4 years. The patients with TASC C and D lesions constituted 76 (72.4%) of all patients. With regard to demographic and biochemical parameters; hypercholesterolaemia and smoking were more common, LDL and blood glucose levels at 2 hours during the OGTT were higher in TASC C+D group. Additionaly, the presence of IGT were more common in Group 2 compared to Group 1. (39.5% vs. 17.5%, p=0.02). Left ventricular EF values were lower in group 2 patients compared to group 1 patients (49.3 ±8 vs. 52.1 ±8.2, p=0.04). The frequency of the suprainguinal and infrainguinal disease was statistically similar between groups. Mean ABI values were lower in patients of Group 2 compared to patients of Group 1 (0.62 ± 0.1 vs. 0.73 ± 0.09) (Table 1). As the result of univariable regression analysis, the presence of hypercholesterolaemia, smoking and IGT were entered into multivariable logistic regression analysis. The presence of IGT (OR =3.296, 95%CI = 1.087-9.997, p=0.03) and smoking (OR=3.395, 95%CI= 1.114-10.343, p=0.03) were the independent factors for predicting a higher TASC class (TASC C & D) in multivariable logistic regression analysis. In ROC analysis, 2-hour OGTT plasma glucose level > 138 mg/dl predicted TASC C&D with a sensitivity of 94.1 % and a specificity of 30.6% (AUC 0.629, p = 0.04).

Conclusion: The presence of IGT is associated with the complexity of PAD and is in line with the theory that impaired fasting glucose is a risk factor for cardiovascular disease.

Keywords: Diabetes Mellitus, Oral Glucose Tolerance Test, Peripheral Arterial Disease

Table1. Comparison of groups in terms of demographic, clinical and laboratory parameters

Variables	Group 1 (TASC A and B) (n: 29)	Group 2 (TASC C and D) (n: 76)	p
Age, years	60.3±13.2	61±10.8	0.78
Male gender, n %	23(79.3)	67(74.4)	0.25
BMI (kg/m2)	28.3±4.7	28.6±4.6	0.82
Hypertension, n (%)	7 (24.1)	22 (28.9)	0.62
Hyperlipidemia, n (%)	4(13.8)	26 (34.2)	0.04
Smoking, n (%)	5 (17.2)	32 (42.1)	0.02
History of CAD	6 (20.7)	19(25)	0.64
LVEF (%)	52.1±8.2	49.3 ±8.0	0.04
Creatinine (mg/dl)	0.8±0.2	1.1±0.1	0.16
Total cholesterol, mg/dL	197.5±46.4	199.5±45.1	0.9
LDL-C, mg/dL	124.1±38.1	186.4±73.2	<0.01
HDL-C, mg/dL	52.1±37.4	40.2±10.4	0.23
Triglyceride, mg/dL	155.5±67.1	139.3±37.2	0.65
Ankle SBP, mmHg	131.4±19.2	129.9±19.3	0.72
Brachial SBP, mmHg	94.8±18.9	88.7±18.8	0.02
ABI	0.73±0.09	0.62±0.1	0.02
2-hour OGTT plasma glucose (mg/dl)	111.6±26.7	139.3±37.2	<0.01
Presence of IGT, n (%)	5 (17.2)	30 (39.5)	0.02
İnfrainguinal Disease,n(%)	19 (65.5)	46 (60.5)	0.64

ABBREVIATIONS: BMI, body mass index; CAD, coronary artery disease; LVEF, left VENTRICULAR ejection fraction; LDL-C, low density lipoprotein cholesterol; HDL, high density lipoprotein cholesterol; SBP, systolic blood pressure; ABI, ankle brachial index; OGTT, oral glucose tolerance test; IGT, impaired glucose tolerance.

OA-76 ENDOVASCULAR TREATMENT OF SUBCLAVIAN ARTERY DISEASE A SINGLE CENTRE'S EXPERIENCE

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Objective: Endovascular interventions have became the preferred strategy for the treatment of subclavian artery stenosis or occlusive diseases, because of their less invasive nature and complication rates compared with surgery. Most of the lesions detected in subclavian artery is due to athe- rosclerosis however, trauma, dissection, thoracic outlet syndrome and vasculitis may be encountered as different etiological factors. An important proportion of patients with subclavian artery disease (SAD), present with upper extremity ischemic symptoms and/or symptoms related to vertebro- basiler insufficiency such as dizziness or syncope. Duplex ultrasonography and computerised tomography (CT) with 3D reconstruction are the main tools used for diagnosis. In this context, our aim was to evaluate the demographic characteristics, risk factors, symptom presentation, angiographic findings and technical aspects of the patients diagnosed with SAD and treated percutaneously.

Method: We retrospectively analysed our hospital records and reviewed 44 patients treated with endovascular approach in the year between January 2014 and June 2020.

Result: A total number of 44 patients (%52.3 n=23 men) enrolled for the present study. Mean age was 62.3∓7.9. Hyperlipidemia, hypertension and smoking were most frequently observed risk factors among SAD patients in a descending order. 26 patients had coronary artery disease (CAD) treated by percutaneously or surgically (%25 n=11, %34 n=15 respectively) and %69.2 of them had multivessel disease. Eight patients had prior carotid artery revascularization for stroke or transient ischemic attack. The predominant symptom was upper extremity claudication (%50) in the study population. Coronary steal phenomena was demonstrated in ten patients and intervention was performed in two patients preoperatively to sustain a patent IMA flow. All patients had CT angiography or duplex ultrasonography imaging before the procedures. Common femoral artery was the most frequently used access site for the interventions (%86.4 n=38) and six patients had dual access mainly performed via brachial artery puncture. Balloon expandable stents were used in the majority of cases (%86.4 n=38) and %20.5 of the lesions involved the ostium. Technical success was achieved in %88.6 (n=39) patients. Occlusive lesions constituted %25 of the cases and success rate was significantly lower in these subjects compared with stenotic lesions (%63 vs %96 respectively). Access site hamotoma was detected in two patients required transfusion and one patient suffered from upper extremity embolism.There were no other procedure related adverse events or death.

Conclusion: SAD incidence is quite low. However, the burden of accompanying risk factors and concomitant disease prevalence is high. Utility of endovascular therapy for subclavian artery disease treatment is increasing steadily. Complications are significantly lower and results are satisfactory particularly in stenotic lesions.

Keywords: subclavian artery disease, endovascular treatment, complications

Demographic, Clinical, Angiographic and Technical Features of SAD Patients

Demographic and Clinical Features	n=44
Age, years	62.3∓7.9
Men n(%)	23 (%52.3)
Diabetes Mellitus n(%)	16 (%36.4)
Hypertension n(%)	26 (%59.1)
Smoking n(%)	21 (%47.7)
Hyperlipidemia n(%)	28 (%63.6)
Chronic Renal Failure n(%)	2 (%4.5)
Previous PCI n(%)	11 (%25)
Previous CABG n(%)	15 (%34.1)
Previous MI n(%)	9 (%20.1)
Multivessel Disease n(%)	18 (%40.9)
Previous CEA or CAS n(%)	8 (%18)
Heart Failure n(%)	4 (%9.1)
Indication	n=44
Upper Extremity Symptoms n(%)	22 (%50)
VBI Symptoms n(%)	15 (%34.1)
Coronary Steal Phenomena n(%)	10 (%22.7)
Preoperative IMA Patency n(%)	2 (%4.5)
Takayasu Disease n(%)	1 (%2.2)
Angiographic and Technical Aspects	n=44
CFA Access n(%)	38 (%86.4)
Guiding System n(%)	32 (%72.7)
Technical Success n(%)	38 (%86.4)
Predilatation n(%)	22 (%50)
Total Occulision n(%)	11 (%25)
Baloon Expandable Stent n(%)	38 (%86.4)
Stent Size (mm)	7.83∓0.7
Baloon Size (mm)	5.1∓1.25
Stent Length (mm)	28.9∓7.2
Complications	n=44
Upper Extremity Embolism n(%)	1 (%2.2)
Hematoma n(%)	2 (%4.5)

PCI percutaneous coronary intervention, CABG coronary artery bypass grafting, MI myocardial infarction, CEA carotis endarterectomy, CAS carotid artery stenting, VBI vertebrobasiler insufficiency, IMA internal mamarian artery, CFA common femoral artery.

OA-77 ILIAC ARTERY RUPTURE CHARACTERISTICS, MANAGEMENT AND PROGNOSIS: A SINGLE CENTER EXPERIENCE OF 15 CASES

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OBJECTIVE: Iliac artery endovascular treatment by balloon or stent for stenosis or occlusion carries the risk of rupture of the iliac artery. Iliac artery rupture (IAR) after angioplasty occurs between 0.8% to 3% of cases. IAR may result in bleeding acutely and is especially hard to manage because of the heavy blood loss, therefore must be treated immediately. Bleeding from the IAR can lead to mortal outcome because of the pelvic cavity location and thin membrane coverage. IAR after angioplasty is generally diagnosed promptly because acute bleeding symptoms appear rapidly during or directly after the procedure. Although inadequate diameter, severe tortuosity, and heavy calcification are prominent risk factors, there is no conclusive parameter to predict onset of rupture. The treatment option is generally endovascular management, it has less morbidity and mortality than open surgical repair. There are only few studies evaluating the underlying risk factors, clinical characteristics, angiographic findings and technical details of the IAR also the management and prognosis. The aim of this study was to evaluate the patients with IAR and determine the risk factors, diagnostic tools, lesion characteristics and procedural success rates of treated at our tertiary referral center.

METHODS: In the present retrospective study, we searched our hospital's database for IAR between 2015 and 2020. The side branch ruptures and common femoral artery ruptures were excluded. The data of 15 consecutive patients IAR were reviewed.

RESULTS: 15 patients (87% male) were complicated as IAR. Mean age was 58.7 ± 6 years. Dyslipidemia (93%) was the most prevalent cardiovas- cular risk factor. There were 7 (46.7%) patients with a history of coronary artery disease. Severe claudication (Rutherford 3) was the most common lower extremity symptom (66.7%) and TASC D was the most common type of iliac artery lesion (60%). 13 patients (87%) had total occlusion and CIA lesion extending into EIA was the most common lesion type (60%) encountered. Retrograde angioplasty via common femoral artery was selected in 10 (66.7%) patients. In 12 patients (80%) balloon pre-dilatation performed and IAR occurred in 4 (27%) of them. IAR after post-dilatation of self ex- panding stent deployment was %33 and after balloon expandable stent dilatation is 40%. Proximal part of external iliac artery was the most common rupture site (46.7%, 7 patients). Stent grafts were successfully implanted to all patients after IAR with mean diameter of 7.5 ± 0.8 mm. Two patients died consequences of IAR. Mean time between rupture and graft stent implantation in survivals were 5 ± 2.5 minutes. Patients followed up for 33 ± 18 months and 3 (%20) stent graft restenosis occurred.

CONCLUSIONS: IAR should be diagnosed promptly. Immediate endovascular management of IAR is an effective strategy with high procedural suc- cess. IAR presents a particular challenge and procedural success is dependent upon operator's experience.

Keywords: Angioplasty, endovascular, iliac artery, rupture

Demographics, clinical characteristics, angiographic features and procedural details of patients with iliac artery rupture

Age, years	58.7 ± 6
Male, n(%)	13 (87)
Hypertension, n(%)	9 (60)
Dyslipidemia, n(%)	14 (93)
Diabetes mellitus, n(%)	5 (33)
Smoking, n(%)	11 (73)
Coronary artery disease, n(%)	7 (46.7)
Rutherford 2	3 (20)
Rutherford 3	10 (66.7)
Rutherford 4	2 (13.3)
Rutherford 5	0 (0)
Rutherford 6	0 (0)
Left, n(%)	9 (60)
TASC B	3 (20)
TASC C	3 (20)
TASC D	9 (60)
Ipsilateral below iliac lesion, n(%)	5 (33)
History of ipsilateral iliac angioplasty, n(%)	3 (20)
Total occlusion, n(%)	13 (87)
Stenosis, n(%)	2 (13.3)
Common iliac artery lesion only, n(%)	0 (0)
Common and external iliac artery involvement, n(%)	9 (60)
External iliac artery lesion only, n(%)	6 (40)
Index lesion In-stent restenosis, n(%)	0 (0)
Retrograde angioplasty, n(%)	10 (66.7)
Subintimal recanalization, n(%)	9 (60)

Balloon predilatation, n(%)	12 (80)
Mean predilatation balloon diameter, mm	6 ± 0.8
Rupture after balloon predilatation, n(%)	4 (27)
Mean rupture causing pre-dilatation ballon diameter, mm	6.25 ± 0.75
Rupture after balloon post-dilatation of self expanding stents, n(%)	5 (33)
Mean post-dilatation balloon diameter causing rupture, mm	8 ± 0.75
Rupture after dilatation of balloon expandable stent, n(%)	6 (40)
Mean balloon expandable stent diameter causing rupture, mm	8 ± 0.9
Common iliac artery rupture, n(%)	0 (0)
Iliac bifurcation rupture, n(%)	1 (6.7)
Proximal external iliac artery rupture, n(%)	7 (46.7)
Mid-external iliac artery rupture, n(%)	5 (33)
Distal external iliac artery rupture, n(%)	2 (13.3)
Graft stent implantation, n(%)	15 (100)
Mean graft stent diameter, mm	7.5 ± 0.8
Complete recanalization of iliac lesion, n(%)	15 (100)
In-hospital mortality, n(%)	2 (13.3)
Mean time between rupture and graft stent implantation in exitus, minutes	42 ± 18
More than one graft stent implantation in a patient, n(%)	2 (13.3)
Time between rupture and graft stent implantation in survivals, minutes	5 ± 2.5
Mean hospitalization after rupture, days	2.2 ± 1.2
Graft stent restenosis, n(%)	3 (20)
Transfusion, n(%)	5 (33)
Mean follow up, months	33 ± 18

OA-78 CLINICAL OUTCOMES ACCORDING TO DIFFERENT STENT TYPES IN PATIENT WITH CAROTID ARTERY STENTING

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OBJECTIVE: The aim of this study was to evaluate clinical outcomes according to different carotid stent types among patient with Carotid Artery Stenting(CAS) especially in stent brand that we use frequently

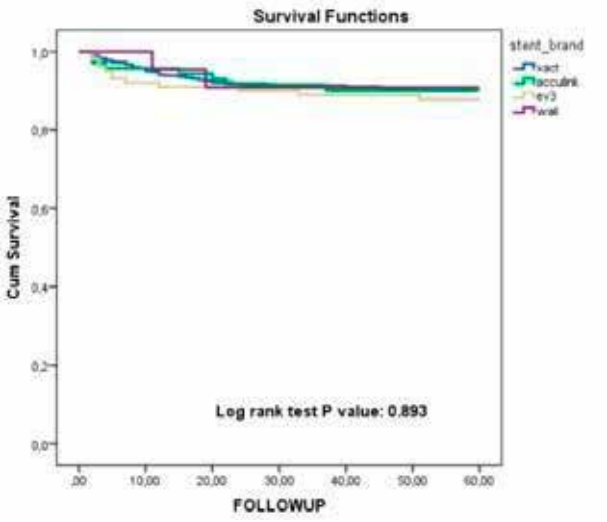
METHOD: A total of 615 patient patients underwent carotid artery stenting with different carotid stent types enrolled to the study. The patients were categorized four stent types (especially stent brands: Xact, Acculink, Ev3, Wall). In hospital outcomes and 5-year death were compared between these groups.

RESULTS: The patients' baseline characteristics, in-hospital outcomes and 5- year mortality were demonstrated in Image 1. Age, gender, prevalence of hypertension, diabetes mellitus, were similar between the groups. The frequency of smoking and previous Myocardial Infarction(MI) were higher in the Xact and Acculink stent groups whereas the frequencies of previous coronary intervention, coronary artery bypass grafting and ipsilateral en- darterectomy were similar between the groups. During hospitalization, the rate of ipsilateral stroke, major stroke, transient ischemic attacks, MI and death were similar between the groups. The 5-year Kaplan-Meier overall survival rates (Image 2) and 5-year death were similar between the groups.

CONCLUSION: Carotid stents of different structural designs are available. "Open cell" and ''closed cell" stent designs are common terminology for carotid stent tpyes. Closed cell stent design has been associated with low stroke in some studies, especially symptomatic patients, but no difference has been found in some studies. Little and conflicting evidence exists on the impact on outcome of the use of different carotid stent types during CAS. Therefore, our study evaluated CAS outcomes according to frequent stent brands in our center not only open or closed cell stent design. No significant difference was found between the in-hospital results of 4 stent types / brands used in carotis stent patients. Also 5-year mortality rates were found similar.

Keywords: carotid artery stenting, stent types, outcomes

5-year Kaplan Meier Survival Rates



Baseline characteristics, in-hospital outcomes and 5-year mortality

Table 1 Characteristics of patients stratified by stent brand

Characteristics	Xact (n=410)	Acculink (n=73)	Ev3 (n=105)	Wall (n=27)	P value
Age	67 ± 9	69 ± 8	67 ± 8	68 ± 8	0.812
Gender, male	299 (72.9)	52 (71.2)	76 (72.4)	22 (81.5)	0.772
Hypertension	300 (73.3)	60 (82.2)	89 (84.8)	24 (88.9)	0.019
Diabetes mellitus	193 (47.4)	32 (43.8)	45 (42.9)	13 (48.1)	0.820
Hyperlipidemia	236 (57.8)	45 (61.6)	57 (54.3)	13 (48.1)	0.588
Smoking	198 (48.6)	37 (50.7)	34 (32.4)	6 (22.2)	0.001
Previous myocardial infarction	169 (41.4)	36 (49.3)	21 (20.4)	7 (26.9)	<0.001
Previous percutaneous coronary intervention	165 (40.3)	33 (45.2)	38 (36.2)	12 (44.4)	0.647
Previous coronary artery bypass grafting	106 (26.3)	13 (17.8)	25 (24.5)	5 (19.2)	0.416
Previous ipsilateral endarterectomy	10 (2.4)	2 (2.8)	1 (1.0)	1 (3.7)	0.581
Symptomatic lesion	129 (31.5)	21 (28.8)	35 (33.3)	7 (25.9)	0.972
Stenosis, ipsilateral					
50%-69%	25 (6.1)	3 (4.1)	10 (9.5)	3 (11.1)	0.360
70%-89%	239 (58.3)	40 (54.8)	52 (49.5)	11 (40.7)	0.049
≥90%	146 (35.6)	29 (39.7)	43 (41.0)	13 (48.1)	0.455
ICA stenosis >70%, contralateral	105 (25.7)	19 (26.4)	17 (16.2)	8 (30.8)	0.177
Predilation	58 (14.1)	17 (23.3)	4 (3.0)	0 (0.0)	<0.001
Poststent dilatation	351 (87.1)	66 (90.4)	95 (90.5)	26 (96.3)	0.383
In-hospital outcomes					
Ipsilateral stroke	5 (1.2)	1 (1.4)	5 (4.8)	1 (3.7)	0.109
Major stroke	3 (0.7)	1 (1.4)	3 (2.9)	1 (3.7)	0.237
Transient ischemic attack	5 (1.2)	3 (4.1)	5 (4.8)	1 (3.7)	0.097
Myocardial infarction	5 (1.2)	0 (0.0)	1 (1.0)	1 (3.7)	0.480
Death	5 (1.2)	2 (2.7)	3 (2.9)	2 (7.4)	0.110
5-year death	40 (9.9)	7 (9.9)	12 (11.8)	2 (8.0)	0.928

OA-79 EFFECTS OF THE ANTI-HYPERTENSIVE AGENTS ON CHOROIDAL THICKNESS IN NEWLY DIAGNOSED HYPERTENSION PATIEN

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Objective: To investigate the effect of hypertension and agents used for hypertension treatment on choroidal thickness.

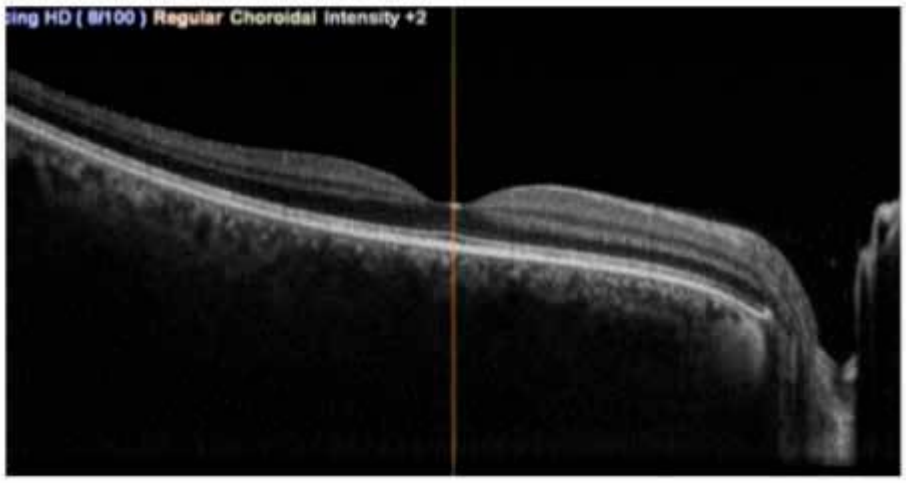
Material-Method: The study includes 64 newly diagnosed hypertension patients and 40 age-matched healthy subjects. 24 of the hypertension patients received angiotensin converting enzyme inhibitor, 20 of them received angiotensin receptor blocker, 20 of them received beta-blocker for treatment. Choroidal thicknesses of the subjects were measured using spectral domain optical coherence tomography in the innitial examination day and measurements repeated one month later.

Results: Mean subfoveal choroidal thickness of control group was 275.64±22.3 µm and mean subfoveal choroidal thickness of hypertension patients was 238.4±22.4 µm. Choroidal thickness was significantly thinner in hypertension group than the control group ($p<0.01$). Mean subfoveal choroidal thickness was 261.3±21.6 µm in patients receiving angiotensin converting enzyme inhibitor, 259.7±21.3 µm in patients receiving angiotensin receptor blocker and 240.4±24.57 µm in patients receiving beta blocker. There were found statistically significant increase in subfoveal choroidal thickness in patients receiving angiotensin converting enzyme inhibitor and angiotensin receptor blocker ($p=0.004$ and $p=0.002$, respectively). But the differences in patients receiving beta-blockers was not stattistically significant ($p=0.67$).

Conclusion: Hypertension patients had thinner choroidal thickness than healthy subjects. In short-term, choroidal tickness got thickened in hyper- tension patients receiving angiotensin converting enzyme inhibitor and angiotensin receptor blocker. However, there was no significant difference on choroidal thickness in patients receiving beta-blockers agents. These effects should kept in mind while monitoring the patients who have choroiretinal diseases such as hypertensive retinopathy, diabetic retinopathy anda ge-related macular degeneration, etc.

Keywords: Angiotensin converting enzyme, Angiotensin receptor blocker, Choroidal thickness, Hypertension

Figure 1



Spectral domain optical coherence tomography image for EVALUATING the SUBFOVEAL choroidal thickness.

Table 1. Demographic and clinical data of the study population.

	Hypertensive Patients	Controls	P value
Age (years)	62.1± 9.9	60.5± 8.9	0.169
Gender (male)	46.6%	53.0%	0.29
Body mass index (kg/m2)	27.1±5.2	26.3±4.0	0.241
Smokers (n-%)	32%	29%	0.012
Duration of hypertension (years)	±5.8±2.4	-	
Systolic blood pressure (mmHg)	143.8±21.2	119.2±16.2	<0.001
Diastolic blood pressure (mmHg)	91.0±11.3	81.6±8.5	<0.001

OA-80 POTENTIAL DRUG-DRUG INTERACTIONS WITH NONVITAMIN K ORAL ANTICOAGULANTS IN ELDER PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION

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Objective. Atrial fibrillation (AF) is the most common arrhythmia that increases the risk of death by 1,5 to 2 fold. AF prevalence is approximately 9%–17.8% in people aged 80 years or older. Older patients have heterogeneous clinical profiles, polypharmacy and a high comorbidity burden. After 2013, an important drug group nonVitamin K oral anticoagulants (NOACs) (Apixaban,Rivaroxaban,Edoxaban,Dabigatran) was introduced to the Tur- kish market. NOACs have lower risk drug-interactions comparing to warfarin. Despite these advantages, there is little published data to examine the potential drug-drug interactions (PDIs) of NOACs. An objective of this study was to determine PDIs with NOACs and factors effecting on mortality in real-world with nonvalvular AF older patients.

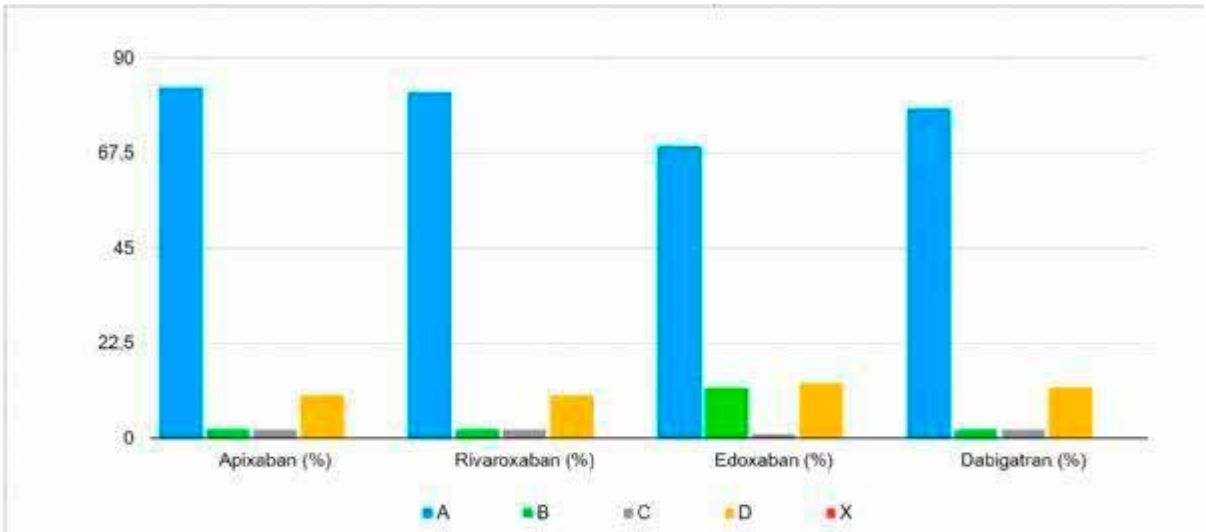
Materials and Methods. The cross-sectional data obtained from the medical registry of patients aged 80 and over referred to Cardiology Clinic Afyon- karahisar University of Health Sciences Hospital between 01 January 2019 to 31 December 2019. Then, we identified the patients taking NOAC and diagnosed nonvalvular AF. After identification, we follow one year by phone-check, and death events recorded. All prescriptions were recorded from the drug lists provided by patients' pharmacy and checked for PDIs using Lexicomp-Online software (Lexi-Comp, Inc., Hudson, OH). Each PDI was annotated by Lexicomp-Online with a risk grade based on the relevance of the interaction (Figure 2). We determine a new index (significant potential drug interaction index=C/D/X group/Total medications) according to classification.

Results. 200 patients enrolled the study, the median age was 83, and 112 (%56) was female. The main co-morbidities were arterial hypertension [140(%70)], heart failure [81(%41,5)], ischemic heart disease [89 (%44,5)] chronic obstructive pulmonary Disease (COPD)[57 (%28,5)], diabetes mellitus [56 (%28)], stroke/transient ischemic attack[49 (%24,5)] and kidney failure[19 (%9,5)](Table 1). Mean medications prescribed per patient was 12. Prescribed NOACs were rivaroxaban [98(%49)], apixaban [76(%38)], dabigatran [14(%7)], edoxaban [12(%6)], respectively. A total of 2115 PDIs were identified, mean PDI was 11. Most PDIs was in group A (%81) and group D (%11) (Figure 1). There was no difference between the NOAC groups according to PDIs and significant PDI index (p>0,05). The results of a univariate analysis of the association between patients' baseline characteristics and mortality. Kidney failure (OR 4,44 [95% CI 1,24-15,80], p=0,021) COPD (OR 3,69 [95% CI 1,53-8,93], p=0,004) and CHADSVASC score (OR 1,005 [95% CI 1,10-4,60], p=0,002) factors found association with mortality risk.

Discussion. The most prescribed NOACs were rivaroxaban and apixaban. Most of the prescribed drugs were in low-risk drug interaction class. While mortality risk has relevance with kidney failure, COPD and CHADSVASC score.We found no association with PDIs, significant PDI index and mortality.

Keywords: Atrial fibrillation, nonVitamin K oral anticoagulants, Drug-drug interaction, Late elderly, Mortality

Figure 1



	A	B	C	D	X	N/A
Apixaban (%)	83	2	2	10	0	2
Rivaroxaban (%)	82	2	2	10	0	3
Edoxaban (%)	69	12	1	13	0	2
Dabigatran (%)	78	2	2	12	0	6

Graphical representation of potential drug interaction percentages of NOAC drugs

X	**Avoid Combination** Data demonstrate that the specified agents may interact with each other in a clinically significant manner. The risks associated with concomitant use of these agents usually outweigh the benefits. These agents are generally considered contraindicated.
D	**Consider Therapy Modification** Data demonstrate that the two medications may interact with each other in a clinically significant manner. A patient-specific assessment must be conducted to determine whether the benefits of concomitant therapy outweigh the risks. Specific actions must be taken in order to realize the benefits and/or minimize the toxicity resulting from concomitant use of the agents. These actions may include aggressive monitoring, empiric dosage changes, choosing alternative agents.
C	**Monitor Therapy** Data demonstrate that the specified agents may interact with each other in a clinically significant manner. The benefits of concomitant use of these two medications usually outweigh the risks. An appropriate monitoring plan should be implemented to identify potential negative effects. Dosage adjustments of one or both agents may be needed in a minority of patients.
B	**No Action Needed** Data demonstrate that the specified agents may interact with each other, but there is little to no evidence of clinical concern resulting from their concomitant use.
A	**No Known Interaction** Data have not demonstrated either pharmacodynamic or pharmacokinetic interactions between the specified agents

Table 1

VARIABLES	APIXABAN (n=76)	RIVAROXABAN (n=98)	EDOXABAN (n=12)	DABIGATRAN (n=14)
Age (Years)	84,18±3,58	84,14±3,35	84,5±2,8	85,29±3,70
Death	22 (%29)	31 (%32)	1 (%8)	3 (%21)
Hypertension	52 (%68)	66 (%67)	10 (%83)	12 (%86)
Diabetes Mellitus	14 (%18)	34 (%35)	4 (%33)	4 (%29)
Heart Failure	33 (%43)	40 (%41)	3(%25)	7 (%50)
Stroke/Transient Ishchemic Attack	33 (%43)	39 (%40)	7 (%58)	10 (%71)
Ischemic Heart Disease	28 (%36)	40 (%41)	4 (%33)	4 (%29)
Chronic Renal Disease	9 (%12)	8 (%8)	0 (%0)	2 (%14)
Chronic Obstructive Pulmonary Disease	15 (%20)	33 (%34)	5 (%42)	4 (%29)
CHADSVASC Scores	4,84±1,54	4,59±1,58	5,08±1,88	5,0±1,46
Total PDIs	13,88±12,61	11,33±6,96	13,25±7,72	12,71±7,22
Significant PDIs Index	11,95±11,61	12,41±12,63	16,17±9,70	11,51±8,45
PDI GROUP A	802 (%83)	945 (%82)	208 (%69)	135 (%78)
PDI GROUP B	16 (%2)	18 (%2)	37 (%12)	3 (%2)
PDI GROUP C	24 (%2)	27 (%2)	3 (%1)	4 (%2)
PDI GROUP D	101 (%10)	118 (%10)	38 (%13)	20 (%12)
PDI GROUP X	1 (%0)	3 (%0)	0 (%0)	0 (%0)
WBC (x10³/mm³)	7,94±2,85	9,30±7,43	7,50±2,32	8,59±2,30
HB (g/dL)	12,59±2,11	12,56±1,94	12,68±1,18	12,46±2,27
PLT (x10³/mm³)	212,21±66,25	220,29±71,77	253,17±79,14	216,86±64,41

VARIABLES	APIXABAN (n=76)	RIVAROXABAN (n=98)	EDOXABAN (n=12)	DABIGATRAN (n=14)
Fasting Blood Glucose (mg/dL)	110,03±28,28	133,49±60,15	129,17±40,89	119,66±35,71
Creatinine (mg/dL)	1,05±0,35	1,09±0,38	0,88±0,26	1,11±0,43
Glomerular Filtration Rate (GFR)	54,04±15,48	58,41±22,05	66,79±16,65	56,70±19,81
Na (mg/dL)	139,94±3,66	138,72±4,37	137,83±5,93	141,47±3,39
K (mg/dL)	4,93±4,60	4,52±0,61	4,44±0,41	4,12±0,38
Cl (mg/dL)	102,50±5,04	101,46±5,00	102,57±8,38	101,81±5,22
AST (mg/dL)	32,95±103,91	22,27±23,61	17,62±8,54	15,54±9,84
ALT (mg/dL)	14,92±10,50	13,32±6,05	10,59±3,15	22,73±14,87
CRP (ng/dL)	5,53±13,92	3,04±4,52	1,97±2,67	8,80±25,16
LV EF (%)	55,23±6,88	55,27±4,60	55,60±1,38	54,25±5,12

Characteristics and blood test results of the study population according to NOAC groups

OA-81 EVALUATION OF ELASTIC ARTERIAL STIFFNESS IN PATIENTS WITH PREECLAMPSIA: FLOW-MEDIATED DILATION BASED STU

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Aim: An altered endothelial function (EF) could associate with preeclampsia (PE). However, first analyses are needed to approve this topic. Flow- mediated dilation (FMD) and the measurements offer significant information about EF. The aim of our clinical study is to evaluate the relationship between arterial stiffness parameters and preeclampsia.

Method: We enrolled healthy pregnancies (HP) and pregnant with preeclampsia (PE) in our study. Aortic blood pressure (BP), wave reflection para- meters, aortic pulse wave velocity (PWVcf), and carotid stiffness were measured.

Results: Recordings were successfully attained from all women, and all studies included in the analysis. The mean duration of the studies was 1 hour approximately, and they were all well tolerated (without symptoms and complications). The average gestation age of all the pregnant women was 35
± 3 weeks at the examination. Demographic features and laboratory samples demonstrate in Table 1. Significant proteinuria described hypertensive pregnant women with preeclampsia (with significant proteinuria>300 mg/24 hours, PE). No significant proteinuria found in healthy pregnancies (HP). Maternal age, gestational age, and some previous gestations were similar between study groups. Body weight and body mass index (BMI) were sig- nificantly higher in PE compared with HP and (<0.05). Uric acid levels were within normal values in HP, while in PE they were abnormally increased. Baseline peripheral SBP, DBP, and MBP levels were significantly higher than in HP (<0.001). However, differences were observed in these groups when central hemodynamics is analyzed. Moreover, PE showed higher values of cSBP compared with HP (<0.001). When contrasted with HP women, levels of cSBP and cDBP in women with PE were higher.

Conclusion: Aortic BP, wave reflections, and elastic arteries stiffness are increased in PE. We demonstrated endothelial dysfunctions in patients with PE.

Keywords: Preeclempsia, endothelial dysfunction, flow-mediated dilatation

Table 1: Baseline characteristic of patients and arterial stiffness measurements of the patients

	Healthy pregnant Mean ± SD (N:18)	Preeclampsia (PE) Mean ± SD (N: 17)	P value
Age (years)	29.9 ± 5.1	30.4 ± 4.3	0.21
Gestational age (weeks)	34.6 ± 3.9	34.8 ± 3.1	0.34
Number of gestations(n)	2.8 ± 2.1	3.3 ± 3.0	0.38
BMI (kg/m2)	29.1 ± 5.6	34.1 ± 6.9	0.09
Creatinine (mg/dL)	0.61 ± 0.1	0.59± 0.1	0.64
24-hour proteinuria (g)	0.0 ± 0.1	0.55 ± 0.1	<0.001
Hematocrit (%)	32.2 ± 3.7	34.75± 2.0	0.617
Heart rate (bpm)	79.9 ± 10.6	82.3 ± 11.6	0.54
SBP (mmHg)	109.8 ± 8.9	146.5 ± 6.5	<0.001
DBP (mmHg)	61.5 ± 9.5	84.9 ± 9.8	<0.001
MBP (mmHg)	74.6 ± 5.8	102.9 ± 7.5	<0.001
Peripheral PP (mmHg)	52.3 ± 18.6	57.6 ± 12.7	<0.001
Central SBP (mmHg)	96.7 ± 6.7	130.3 ± 5.8	<0.001
Amplification ratio	1.1 ± 0.2	1.6 ± 0.2	<0.001
AIx@75 (%)	11.7 ± 12.0	21.5 ± 5.9	<0.001
PWV (m/s)	4.9 ± 0.9	9.0 ± 1.7	<0.001

ABRREAVIATIONS: Values are expressed as mean VALUE (MV) ± standard DEVIATION (SD). HP: healthy pregnancies; GH: gestational hypertension; PE: preeclamptic pregnancies; BMI: body mass index; GH: gestational hypertension; PE: preeclamptic pregnancies; SBP: systolic blood pressure; DBP: diastolic blood pressure; MBP: mean blood pressure; PP: pulse pressure; AIx@75: augmentation index adjusted to a heart rate of 75 bpm; PWV: pulse WAVE VELOCITY

OA-82 THE EFFECT OF DIFFERENTIAL ATRIOVENTRICULAR DELAYS ON ARTERIAL DISTENSIBILITY MEASURED BY CAROTID-FEMORAL PULSE WAVE VELOCITY AND SERUM NOREPINEPHRINE LEVELS IN PATIENTS WITH DDD PACING

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Objective: Atrioventricular (AV) delay optimization improves hemodynamics and clinical parameters of patients treated with dual-chamber- pacemakers (DDD). Pulse wave velocity (PWV) is an index of arterial stiffness and a marker of cardiovascular events. An increased value of PWV is an indicator of diffuse atherosclerosis and arterial stiffness. Sympathetic neural control also affects both elastic properties of small resistant and great arteries. We aimed to investigate the impact of differential AV delays (100, 150 and 200 ms respectively) on arterial distensibility measured by carotid
– femoral PWV and serum norepinephrine levels in patients with DDD pacing.

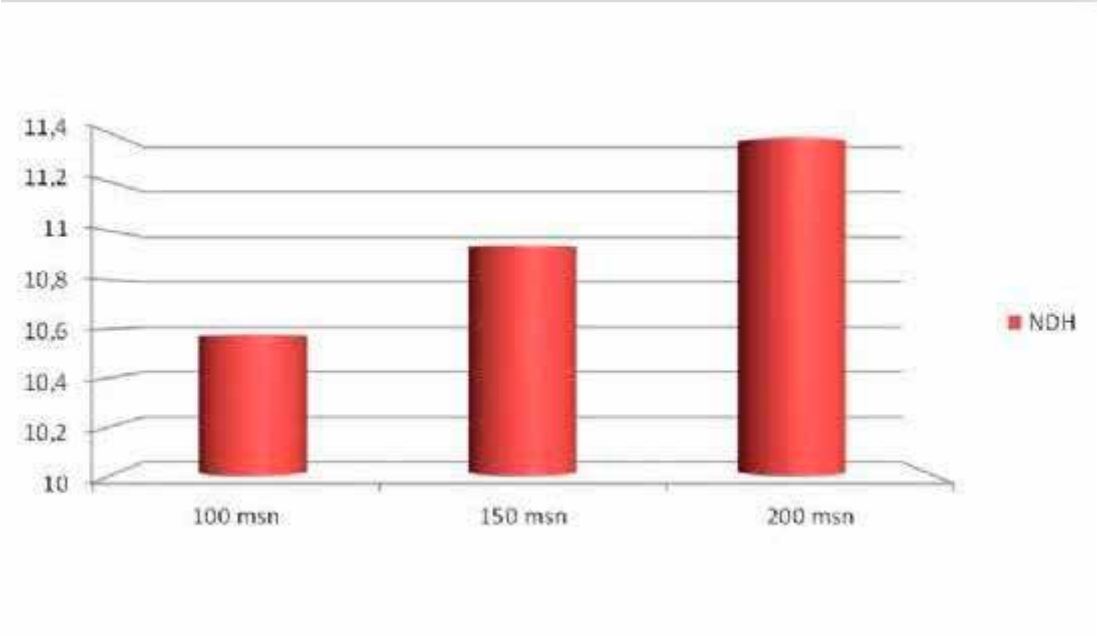
Method: A total of 40 patients with DDD pacing were enrolled in our prospective study. PWV was measured for each AV delay (100 ms,150 ms and 200 ms respectively) with 10 minute resting intervals. Also, blood samples were taken for serum norepinephrine levels at the end of each interval. Pacing was programmed at least 10 beats/minute above the resting heart rate. Aortic PWV was determined by using the automatic device, Complior Colson (France), which allows online pulse wave recording and automatic calculation of PWV. PWV is calculated according to this formula: PWV (m/s)
= Distance (m) / transit time (s). Serum norepinephrine levels were determined by ELISA method.

Results: There was a statistically obvious positive correlation between carotid - femoral PWV and prolonged AV intervals (p<0.001). There was not a statistically significant difference between norepinephrine levels and prolonged AV intervals (p=0.876). In male group; weight, height and waist- hip ratio values were significantly higher than female group. There was not a statistically significant difference between male and female groups in terms of age, body mass index, mean, systolic and diastolic blood pressures, pulse pressures, PWV's and serum norepinephrine levels measured at differential AV delays.

Conclusion: Prolongation of AV delay interval increased carotid-femoral PWV values thereby decreased arterial distensibility independently from serum norepinephrine levels in patients with DDD pacing.

Keywords: DDD pacing, atrioventricular delay, pulse wave velocity, norepinephrine

PWV values measured in increasing AV delay intervals



NE levels in differential AV delay intervals

	AV delay - 100 msn	AV delay - 150 msn	AV delay - 200 msn	p value
NE (ng/L) (min-max)	299.30±288.98 (124.5-1608.2)	1320.96±6053.11 (111.5-38495.80)	1252.62±5663.14 (83.0-35925.90)	0.876

OA-83 THE ROLE OF VITAMIN D DEFICIENCY IN PATIENTS WITH ST ELEVATION MYOCARDIAL INFARCTION

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Objective: Vitamin D deficiency has been shown to be associated with acute coronary events. In this study, we aimed to investigate the effect of 25-hydroxyvitamin D3 (25 [OH] D3) deficiency on the severity of atherosclerosis, the amount of thrombus in the active lesion and the success of the percutaneous procedure in patients with ST elevation myocardial infarction (STEMI).

Methods: We studied 77 patients (mean age 56.00 ± 11.11), 17 of whom were women who hospitalized with the diagnosis of ST elevation myocardial infarction (STEMI) and who underwent percutaneous coronary intervention (PCG) between 1 July and 30 October 2019, in our clinic. Laboratory and demographic characteristics of the patients were recorded. The severity and diffusiveness of coronary atherosclerosis were calculated from the angiographic images using Gensini score. Thrombolysis in Myocardial Infarction (TIMI) thrombus grade, TIMI coronary flow grade and TIMI frame counts (TFC) of the patients were estimated using angiography images before and after PCG. 25-hydroxyvitamin D3 (25 [OH] D3) deficiency was defined as level <20 ng / mL in the blood.

Results: Vitamin D deficiency rate in the study population was found to be 79.22%. The records were analyzed and divided into two groups as those with mild thrombus burden (grade II-III) and those with severe thrombus burden (Grade IV-V) according to TIMI thrombus grade. 25 [OH] D3 levels in patients with grade IV-V thrombus burden (13.95 (5.4 - 24.8) were significantly lower than 25 [OH] D3 levels (16 (5.14 - 47.4) in patients with grade II-III thrombus burden(r: -0.304 p: 0.007) After the procedure, there was a negative correlation between the TIMI frame count number of the culprit lesion and the 25 [OH] D3 level (-0.507 p: <0.001). Although there was a negative correlation between GENSINI score and 25 [OH] D3 levels, no statistically significant difference was detected (r: -0.176 p: 0.128). In multivariate regression analysis, it was found that low vitamin D level was an independent predictor in detecting thrombus burden in the culprit lesion. (p: 0.018)

Conclusion: In addition to the classic risk factors in coronary artery disease, 25 [OH] D3 deficiency affects the thrombus burden in the culprit lesion and the success of the percutaneous coronary intervention performed in the STEMI.

Keywords: Coronary Thrombosis, Vitamin D Deficiency, Myocardial Infarction, Timi Frame Count

figure 1

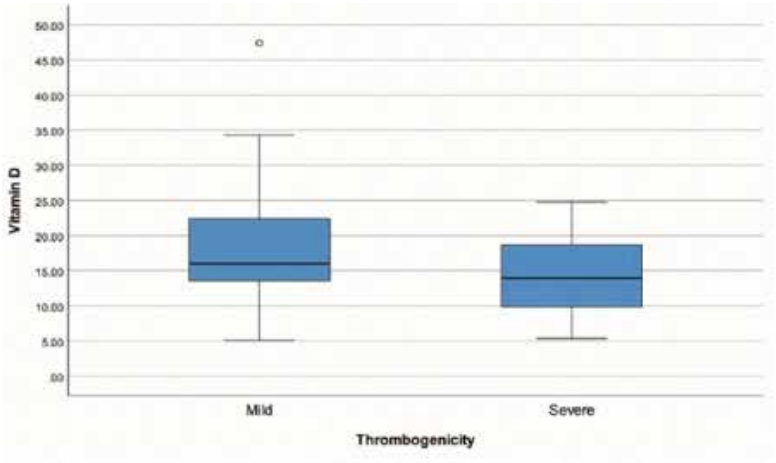
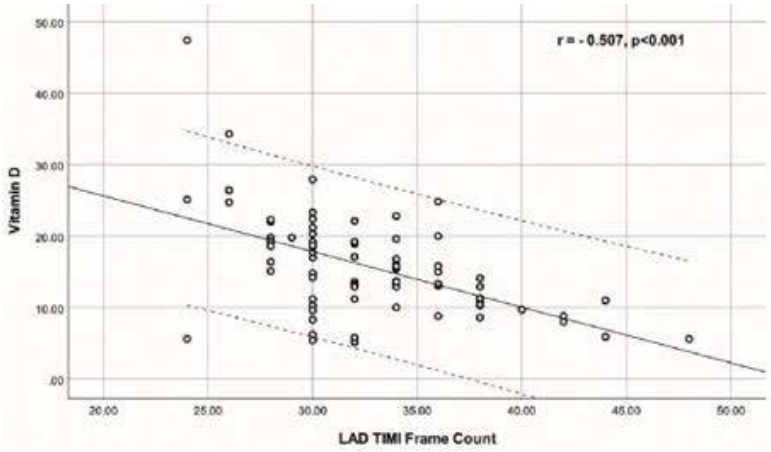


figure 2



OA-84 INVESTIGATION OF ATRIAL ELECTROMECHANICAL DELAY AND EPICARDIAL FAT THICKNESS IN PATIENTS WITH OVERT HYPOTHYROIDISM

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Introduction: Thyroid hormones have many roles on myocardium and metabolic system. Hypothyroidism is associated with endothelial dysfunctions, higher prevalence of atherosclerosis, left ventricle diastolic dysfunction and various arrhythmias. Although previous studies investigated epicardial fat thickness and atrial electromechanical delay in patients with subclinical hypothyroidism, there is limited studies that investigated these parameters in patient with overt hypothyroidism. In this study, we investigated epicardial fat thickness and atrial electromechanical delay (EMD) in patients with overt hypothyroidism. Also we compared with control subjects Methods: Seventy overt hypothyroidism patients (65 female, 5 male, mean age 47 ± 10,1), thirty two healthy control subjects (29 female, 3 male, mean age 46, 4 ± 11,7) are enrolled to study. Patients with overt hypothyroidism that treated with L-tiroksin were enrolled to the study. Patients have been diagnosed hypothyroidism for mean 5,9 ± 4,7 years. Patients with prior myocar- dial infarction and coronary artery disease, congestive heart failure, left ventricular (LV) hypertrophy, prolonged QRS duration (>= 120 msn), chronic kidney disease, other autoimmune diseases, any severe systemic disease, diabetes mellitus, hypertension and rheumatological disease were excluded from the study. Epicardial fat thickness was measured on the free wall of right ventricle in parasternal long- and short-axis views at end-systole for 3 cardiac cycles. Atrial EMD was defined as the time interval from the onset of atrial electrical activity (P wave on surface ECG) to the beginning of mec- hanical atrial contraction (late diastolic A wave). All values were averaged over 3 consecutive beats. Atrial EMD was measured from the lateral mitral annulus and called 'PA lateral', from the septal mitral annulus, called 'PA septal', and from the right ven- tricle tricuspid annulus, called 'PA tricuspid'. Interatrial EMD was calculated as the difference between PA lateral and PA tricuspid, intra-atrial EMD was calculated as the difference between PA septum and PA tricuspid, and left-atrial EMD was calculated as the difference between PA lateral and PA septum

Results: Weight, height and body mass indexes were similar in two groups (table-1). LA diameters and LA areas were similar in two groups (table-1). PA lateral, PA septum, PA tricuspid, interatrial and left-atrial EMD were significantly higher in the patients group than in the control group (table-1). Epicardial fat thicknesses were higher in the patients group than the control group (table-1).

Conclusions: In this study, Atrial EMD and epicardial fat thickness were higher in patients with overt hypothyroidism who were on L-tiroksin medi- cations.

Keywords: Overt hypothyroidism, atrial electromechanical delay, epicardial fat thickness

Basal characteristics, Atrial Electromechanical Delay Parameters and Epicardial Fat Thickness

	Patients Group	Control Group	P
LA Diameter, cm	3,0 ± 0,37	3,1 ± 0,33	0,121
LA Area, cm2	12,8 ± 2,9	13,6 ± 3,0	0,207
Weight, kg	79,2 ±12,0	74,6 ± 13,5	0,086
Height, cm	161,2 ± 7,2	161,7 ± 7,7	0,75
Body mass index, kg/m2	30,5 ± 5,2	28,5 ± 4,8	0,056
PA Lateral, ms	79 ± 12	68 ± 11	0,001
PA Septal, ms	66 ± 11	59 ± 9	0,001
PA Tricuspid, ms	53 ± 9	47 ± 10	0,004
Interatrial EMD, ms	26 ± 9	21 ± 8	0,005
Intra-atrial EMD, ms	13 ± 6	12 ± 7	0,363
Left-atrial EMD, ms	13 ± 6	9 ± 5	0,003
Epicardial Fat Thickness, cm	0,7 ± 0,17	0,62 ± 0,13	0,028

LA: left Atrium, EMD: electromechanical Delay LVDD: left VENTRICLE diastolic diameter, LVSD left VENTRICLE systolic diameter, LVEF: left VENTRICLE ejection fraction

OA-87 THE EFFECT OF MODERATE ALTITUDE ON INDEX OF CARDIAC ELECTROPHYSIOLOGICAL BALANCE (ICEB)

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Introduction: Long-time exposure to high altitude leads to changing at the respiratory, cardiovascular and hematological systems. There is no suf- ficient study about cardiovascular changes in moderate altitude. There are different results in terms of the effect of altitude on cardiac arrhythmias. Index of cardiac electrophysiological balance (iCEB) is described as QT time divided by QRS time (QT/QRS) from the electrocardiogram. It is a new and non-invasive feature, which may anticipate malign ventricular arrhythmias. In the present study, we aimed to evaluate the effect of moderate altitude on iCEB.

Metods: In this study included 40 healthy people living at moderate altitude (1600 m, Group I) and 50 people living at sea level (0-4 m, Group II). All people were born and grew up at the same altitude area. Being migrant to living area, people with structural heart disease, rhythm disorders, echocardiographic abnormality, and history of hypertension, pulmonary disease or any systemic chronic disease were exclusion criteria in the study. Twelve-lead ECGs of the study population were recorded in a quiet room after five minute rest, with 20 mm/mV amplitude and 50 mm/s rate from an ECG machine (Nihon Kohden, Tokyo, Japan). All 12 leads were analysed, but usually assessed in leads DII and V5. The QT interval was calculated as distance between the starting of the QRS to end of the T wave according to isoelectric line. The R-R distance was measured and used to compute the heart rate and to correct QT distance (QTc) with Bazett's formula (QT interval/√(RR interval)). Again, index of cardiac electrophysiological balance (iCEB) was obtained from the QT time divided by QRS time (QT/QRS). All parameters were repeated three times and the mean values were recorded for each ECG parameter.

Results: There were no differences in baseline demographic, laboratory and echocardiographic parameters. In electrocardiography; heart rate, PR interval, QRS interval, and QT interval were similar in both groups (p>0.05). But, QTc interval was statistically significantly higher in the moderate altitude group (410.8 ± 20.1 msn vs 405 ± 20.3 msn, p=0.02). However, there was no significant difference between the groups in terms of iCEB (p>0.05) (Table 1).

Conclusion: In this study, we found significantly higher QTc interval in moderate altitude group compared with the sea level group. Recently, index of cardiac-electrophysiological balance (iCEB) was described as a new, non-invasive marker, which may anticipate malign ventricular arrhythmias. It's increased or decreased values are related with ventricular pro-arrhythmic risk, but in our study, there was no significant difference in the iCEB value between the groups.

Keywords: Moderate altitude, sea level, QTc interval, index of cardiac electrophysiological balance (iCEB)

Table 1

	Moderate Altitude (n=40)	Sea level (n=50)	P value
Age (year)	45± 10.4	46.5 ± 10.5	0.20
Gender			
Men, n (%)	22 (55)	26 (52)	0.09
Women, n (%)	18 (45)	24 (48)	
BMI (kg/m2)	27 ± 4.5	26.2± 4.4	0.32
Systolic BP (mmHg)	133.4 ± 24	129.3 ± 15.5	0.07
Diastolic BP (mmHg)	80.1 ± 14.5	79.2 ± 12.5	0.42
Heart Rate (bpm /dk)	73.7 ± 10.7	73.9 ± 11.9	0.15
Cigarette, n (%)			
(-)	30 (70)	38 (76)	0.57
(+)	10 (30)	12 (24)	
PR (msn)	159.5 ± 23.1	155 ± 20	0.23
QRS (msn)	94.2 ± 14.7	90.3 ± 9.3	0.06
QT (msn)	377.3 ± 24	374 ± 25.7	0.34
QTc (msn)	410.8 ± 20.1	405 ± 20.3	0.02
QT/QRS	4.08 ± 0.52	4.18 ± 0.51	0.22
QTc/QRS	4.49 ± 0.57	4.51 ± 0.52	0.77

OA-88 MALIGN ARRTHYMIA DUE TO LEFT CORONARY SINUS LEAD IN CARDIAC RESYNCHRONIZATION THERAPY

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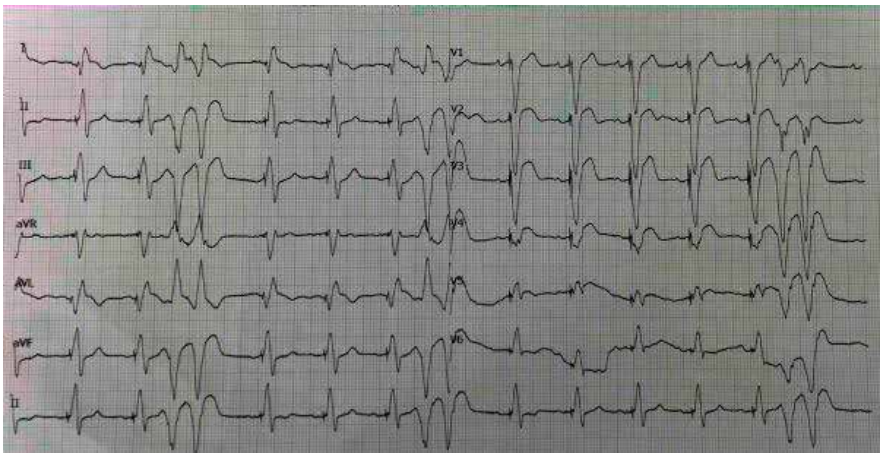
Case: 82 years old women admitted to emergency service due to recurrent intracardiac defibrillations. In patient's ecg taken in the emergency room was observed frequent ventricular extrasystoles (fig-1). Ventricular extrasystoles exits origin were suggested apical right ventricule. The patient was followed up in intensive care. It was learned that the patient had coronary by pass surgery 15 years ago and cardiac resynchronization therapy de- fibrillator were implanted 3 years ago. Acetlysalicylic acid 100 mg 1x1, carvedilol 6,25 mg 2x1, furosemid 40 mg 1x1, valsartan-htc 80 mg 1x1 were in her medication. Several ventricular tachycardia attacks were defibrilated in intensive care unit. Ejection fraction %20, left ventricule dilated, mild mitral regurgitation were seen in her echocardiography. Shocks were observed to be correct in pacemaker control. The left ventricle coronary sinus lead threshold was high. In chest X-ray the left ventricular lead looped in right ventricle and entered to coronary sinus. The patient was then taken to the angiography lab. The coronary sinus lead looped into the right ventricule (fig-2). The coronary sinus lead was attempted to move with the help of ablation catheter accesing from the right femoral vein. After the coronary sinus lead was dislocated, ventricular runs was stopped. Coronary sinus lead entered to right ventricle was thought to be lead ventricular tachycardias. After that, no malign arrthymia was seen in intensive care unit. Then in the angiography laboratory, the CRT-D pocket was opened and the coronary sinus lead was extracted. Coronary sinus was cannulated. Posterolateral vein emerged at right angle. Lead was placed in the posterolateral branch with the help of inner catheter. Atrial lead was repositoned. The patient had no arrthymia in her follow up and discharged.

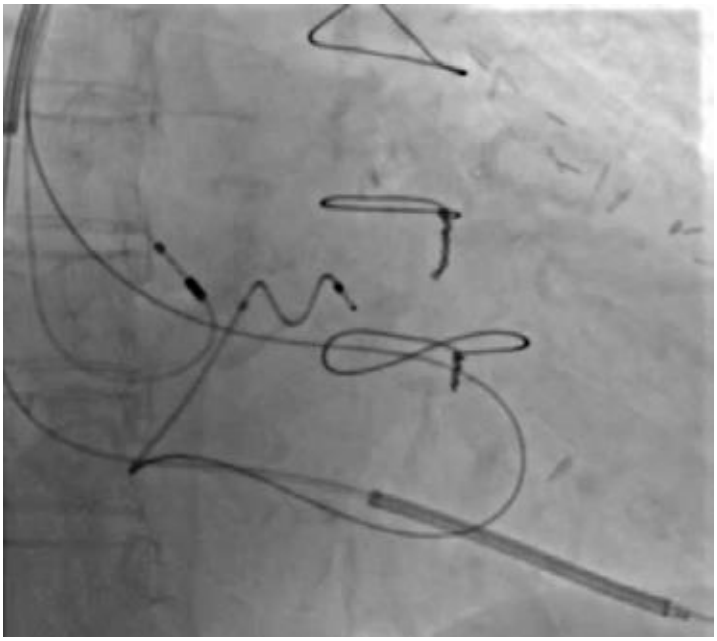
Conclusion: In the cardiac resynchronization treatment, when the side branch is right angled during implantation, the coronary sinus lead should be placed carefully. Also malign arrhythmias should be kept in mind in the late period due to the retraction of the coronary sinus lead.

ECG



ECG in emergency room

Right oblique view of Crt-D



Right oblique VIEW of Crt-D in angiography lab.

OA-89 EVALUATION OF PULMONARY ARTERIAL STIFFNESS IN NEWLY DIAGNOSED HYPOTHYROIDISM

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BACKGROUND AND Aim: Pulmonary hypertension (PH) is one of the complications of hypothyroidism patients. Many of the current screening mo- dalities are dependent on detecting a rise in pulmonary arterial pressure (PAP). However, high capacitance of the pulmonary circulation implies that early microcirculation loss is not accompanied by a change in resting PAP. Therefore, we aimed to demonstrate early changes in pulmonary vascular disease in newly diagnosed hypothyroidism patients with a new echocardiographic parameter, called as pulmonary arterial stiffness (PAS).

Methods: Seventy five in newly diagnosed hypothyroidism patients and 75 age- and sex-matched healthy control subjects were enrolled in this study. PAS was calculated echocardiographically by using maximal frequency shift and acceleration time of the pulmonary artery flow trace.

Results: PAS was significantly increased in the hypothroidism group compared to the control group (20.5 ± 3.5 vs. 13.5 ± 2.3, p < 0.001).There was a significant negative correlation between PAS and TSH level (r = 0.459, p <0.001).

Conclusions: Our results suggest that in newly diagnosed hypothyroidism patients affects pulmonary vascular bed starting early onset of disease and this can be demonstrated by an easy-to-measure echocardiographic parameter.

Keywords: Pulmonary artery stiffness, Hypothyroidism, Pulmonary artery hypertension

Figure-1

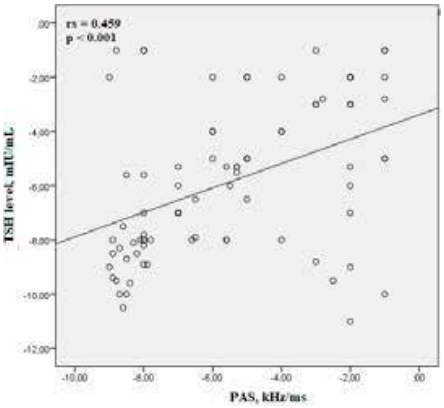

TABLE.1

Table 1. Demographic, procedural and clinical data for the study group.

Variables	Hypothyroidism (n=75)	Control (n=75)	p-value
Age, years	69.1 ± 10.9	71.7± 11.1	0.070
Gender, male n,(%)	97 (24)	68 (38.6)	0.471
Hypertension n,(%)	92 (74.1)	95 (81.8)	0.102
Diabetes Mellitus n,(%)	44 (35.4)	46 (39.7)	0.073
Hyperlipidemia n,(%)	46 (37.1)	42 (36.2)	0.880
Coronary Artery Disease n,(%)	40 (32.2)	47 (31.9)	0.090
Smoking n,(%)	40 (30.7)	61 (52.6)	0.042
Hemoglobin, g/dL	13.3 ± 1.2	13.9 ± 1.0	0.122
Hematocrit, %	40.0 ± 3.6	42.3 ± 3.5	0.101
White Blood Cell, 10^3/µl	10.2 ± 2.8	10.3 ± 2.9	0.890
Platelet, 10^3/µl	241 ± 73	244 ± 71	0.570
Total Protein, g/L	68.8 ± 2.5	73.4 ± 2.7	0.085
Albumin, g/dL	3.6 ± 0.3	3.9 ± 0.4	0.071
Glucose, mg/dl	105 ± 17	107 ± 14	0.120
Total cholesterol, mg/dL	172 ± 35	169 ± 37	0.770
LDL cholesterol, mg/dl	115.9 ± 23	92.8 ± 24	**0.005**
HDL cholesterol, mg/dl	39 ± 10	36 ± 11	0.880
Triglycerides, mg/dl	118 ± 51	123 ± 56	0.420

Numerical variables are presented as mean± SD and categorical variables as percentages.LDL: Low-density lipoprotein, HDL: High-density lipoprotein

Table 2. Echocardiographic data for the study group.

Variables	Hypothyroidism (n=75)	Control group (n=75)	p-value
LVEF, (%)	51.8 ± 2.8	55.3 ± 2.4	0.126
TAPSE, mm	17.8 ± 3.5	21.8 ± 2.8	**0.045**
mPAP, mmHg	31.2 ± 3.9	21.5 ± 4.3	**0.004**
PAS, Khz/ms	20.5 ± 3.5	13.5 ± 2.3	**<0.001**

Numerical variables are presented as mean± SD and categorical variables as percentages.LVEF: Left ventricular ejection fraction, TAPSE: Tricuspid annular plane systolic excursion, mPAP: mean Pulmonary arterial pressure, PAS: Pulmonary arterial stiffness

OA-90 WHICH IS MORE SENSITIVE; PROCALCITONIN, C-REACTIVE PROTEIN AND WHITE BLOOD CELLS IN CARDIAC SURGICAL PATIENTS WITH SEPSIS

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Background and Aims: The aim of the study; Procalcitonin (PC), white blood cells (WBC) and C-reaktif protein (CRP) which are the most sensitive in differential diagnosis with sepsis at the postoperative fever.

Methods: We retrospectively analysed 1500 consecutive patients after cardiac surgery operated between January 2015 and May 2020. From the whole cohort we identified two groups based on the postoperative characteristics: patients with sepsis (64 patients) and patients with a resistant fever (156 patients From the two groups were excluded patients with endocarditis, patients treated preoperatively with corticosteroid, those who developed an infection in the ward and patients who died in the first 48 hours. We defined the resistant fever as a fever rising above 38 degrees for the two times. Measurements of PC, CRP and WBC were analysed for the first five postoperative days. Repeated meausures ANOVA was used to compare more than two dependent groups mean.

Results: The mean values of CRP in patients with sepsis and fever were not statistically different at any time-point. PC values were consistently higher in patients with sepsis from the third to the fifth postoperative day. In patients with sepsis, WBC mean values were lower in the first postoperative day but higher in the fifth day.

Conclusion: PC is a reliable value in the difficult diagnosis between sepsis and fever after cardiac surgery, specificly after the 3rd postoperative day. In contrast, preliminary results show that CRP and WBC are less useful for this differential diagnosis.

Keywords: cardiac surgery, sepsis, fever, procalcitonin, c-reactive protein

Comparison of WBC, CRP and PC values.

	preop	1st day	2nd day	3rd day	4th day	5th day	p value
WBC (3.7- 10.01)	6430+-2110	8340+-4245	9660+-4390	10540+-3620	12650+-4760	15630+-6450	0.51
PC (<0.5)	0.21+-0.12	3.2 +- 1.2	4.6 +- 1.6	13.2+- 3.8	14.1 +- 2.3	14.6+- 1.6	0.03
CRP (<5)	8+- 4.4	14.6 +- 7.4	25.8 +- 6.8	32.7 +- 9.7	36.9 +- 8.8	41.2+-5.3	0.23

OA-91 CARDIOVASCULAR RISK AND RENAL FUNCTION ASSESSMENT IN RISER HYPERTENSION PATTERN OF PATIENTS WITH NON-DIPPER

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Background: Hypertension is one of the most important risk factors for cardiovascular and renovascular diseases. Non-dipping hypertension is associated with cardiovascular mortality and mobidity.

Aim: We wanted to investigate the renal functions and cardiovascular risk (with neutrophil to lymphocyte and platelet to lymphocyte ratio) in Riser pattern with non-dipper hypertension patients.

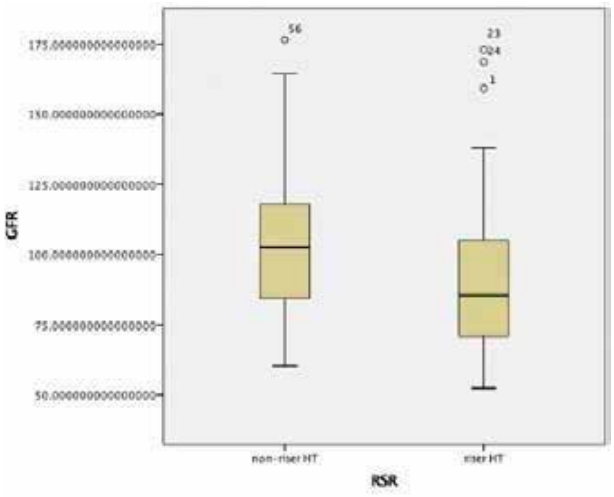
Method: A total of 121 hypertension patients who were diagnosed with non-dipper hypertension as a result of ambulatory blood pressure measure- ment were included in the study. Patients with a known history of kidney failure and coronary artery disease and LVEF<55% were excluded from the study. Patients divided two groups according to the riser pattern. 47 patients had riser pattern, 74 patients had a non-riser pattern. Biochemical and hematologic parameters and 24-h ambulatory blood pressure measurement results were recorded.

Results: Baseline demographic characteristics were similar in both groups. GFR values were statistically significantly lower in patients with riser pattern (92.8±4.2 vs 104±3, p=0.031). Patients with riser patterns have statistically significantly higher neutrophil to lymphocytes ratio (2.25±1.15 vs 1.73±0.54, p=0.001). There was no significant difference between the two groups in terms of PLR values (119.5±44.6 vs 105.9±37.3, p=0,073)

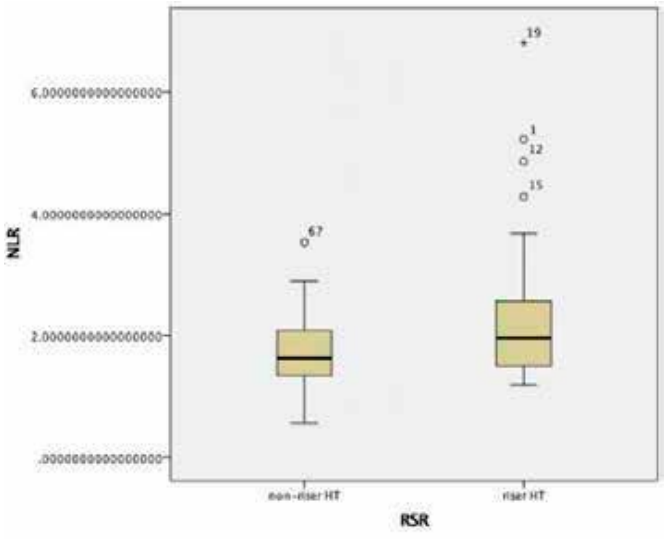
Conclusion: Non-Dipper hypertension patients with riser pattern had low GFR whereas high NLR. According to this result, the riser pattern may be associated with increased cardiovascular and renovascular risks.

Keywords: Riser pattern, Hypertension, Non-dipper, GFR, NLR

GFR values in both groups



NLR values in both groups



	Total (n=121)	Riser HT (n=47)	Non-Riser HT (n=74)	P value
Age, years	60.3±8.8	61.8±9.7	59.4±8	0.22
Female, %	53.7	53.2	54.1	0.926
BMI, kg/m2	30,4 ±4	30.1±4	30.6±4	0.681
eGFR, ml/min	99.7±28	92,8±4,2	104±3	0.031
Diabetes mellitus, %	33.9	31.9	35.1	0.715
Current smoking, %	38	29.8	43.2	0.137
ACEI/ARB, %	72.7	72.3	73	0.939
Beta-blockers, %	35.5	34	36.5	0.784
Calcium-channel blockers, %	39.7	29.8	45.9	0.077
Diuretics, %	53.5	53.2	54.1	0.926
24 h SBP, mm Hg	129±15	128±13	130±17	0.504
24 h DBP, mm Hg	74±9	73±8	74±10	0.359
Daytime SBP, mm Hg	129±16	126±13	132±17	0.055
Daytime DBP, mm Hg	74±11	71±12	76±12	0.022
Nighttime SBP, mm Hg	127±15	131±14	125±16	0.04
Nighttime DBP, mm Hg	72±9	74±12	72±9	0.175
Total cholesterol, mg/dl	200±41	199±40	200±42	0.832
HDL, mg/dl	47±12	48±14	48±11	0.381
LDL, mg/dl	122±33	120±36	123±31	0.605
Triglycerides, mg/dl	165±82	165±78	165±85	0.983
Creatinine, mg/dl	0.85±0.19	0.9±0.22	0.83±0.17	0.048
Glucose,mg/dl	128±44	123±30	132±51	0.3
Hemoglobin g/dl	13.3±1.3	13.4±1,5	13.2±1.1	0.321
NLR	1.94±0.87	2.25±1.15	1.73±0.54	0.001
PLR	111.2±40.7	119.5±44.6	105.9±37.3	0.073

OA-92 GENDER DIFFERENCES IN THE SYSTOLIC BLOOD PRESSURE RESPONSE TO EXERCISE

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Sincan State Hospital

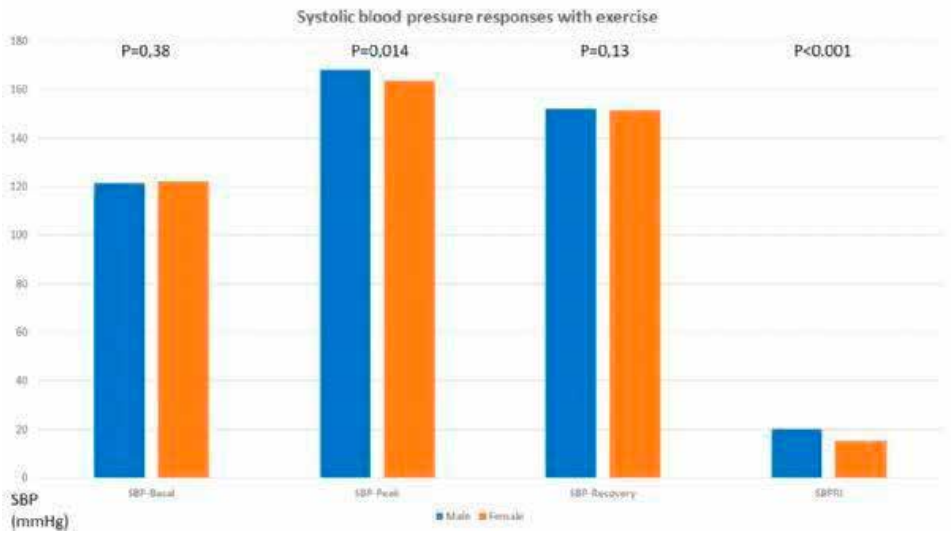
Introduction and Aim: There is a lack of consensus on whether gender can affect systolic blood pressure responses during physical exercise. In our study we aimed to examine the role of gender in determining systolic blood pressure responses by comparing two groups of healthy male and female participants' systolic blood pressure (SBP) measurements before (SBP-B), during peak (SBP-P) and 5 minutes after the treadmill exercise test (SBP-R).

Methods: 549 healthy individuals (298 males; 251 females) performed the treadmill exercise test. SBP values were obtained before, during peak and 5 minutes after the treadmill exercise test. Systolic blood pressure recovery index (SBPRI) was calculated by extracting basal SBP values from SBP-R value.

Results: Both groups had similar basal SPB values, Males (121,32 +/- 13.54) mmHg and Females (122.17 +/- 15.24) mmHg (p=0.38). Male partici- pants had higher SPB values in the peak exercise period (168.36 +/- 20.1) mmHg from females (163.61 +/- 21.17) mmHg with p value statistically significant (p=0.014, Figure). During the recovery period, mean SBP for males was (152,18 +/- 22,4) mmHg and for females was (151,33 +/- 23.7) mmHg with p value=0,13. Although male participants had higher SBP values during peak exercise and the recovery period, SBPRI values comparison showed a statistically significant difference in favor of male participants, male participants mean SBPRI (20,12 +/- 12.14) mmHg and for female participants (15,27 +/- 11,68) mmHg (p<0.001).

Conclusions: This study shows that, healthy individuals' responses to exercise in terms of systolic blood pressure may show differences according to their gender. With two groups having similar basal SBP levels, and despite the fact that males had higher SBP levels during peak exercise and the recovery period, SBPRI values for males was significantly better than females (p<0.001). These results suggest that males and females show significant differences in cardiovascular autonomic responses to exercise. Further studies needed to examine the effects of these differences on cardiovascular diseases development.

Figure



Systolic blood pressure responses with exercise

OA-93 THE RELATIONSHIP BETWEEN ATHEROGENIC INDEXES AND ERECTILE DYSFUNCTION

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Background: The aim of our study was to determine the relationship between erectile dysfunction (ED) and Atherogenic Index of Plasma (AIP) values as indicators of subclinical atherosclerosis.

Methods: A total of 86 patients with ED, which was thought to be vasculogenic and and 88 control subjects who had no ED were enrolled in this study. ED was assessed using the International Index of Erectile Function (IIEF-5) questionnaire form. AIP values were studied and compared between patients with ED (IIEF < 26) and those without ED (IIEF >= 26) using the log10 TG/HDL-C formula.

Results: There was no statistical difference between the groups in age, body mass index, smoking status and biochemical and hormone levels. AIP values were significantly higher in the ED group than in the control group (0.41 ± 0.18, and 0.27 ± 0.13; p = 0.002) (Table 1). A statistically significant negative correlation was observed between the IIEF-5 score and the AIP values (r = - 0.702, p < 0.001) (Figure 1).

Conclusions: Our results demonstrate that higher AIP values are likely to have more severe ED in the future. This study also indicates the importance of referral of patients with ED from urology clinics to cardiology units for risk determination and cardiac assessment, even if they are asymptomatic.

Keywords: Erectile dysfunction, Atherosclerosis, Atherogenic Index

Figure 1. Relationship between IIEF-5 score and, Atherogenic Index of Plasma

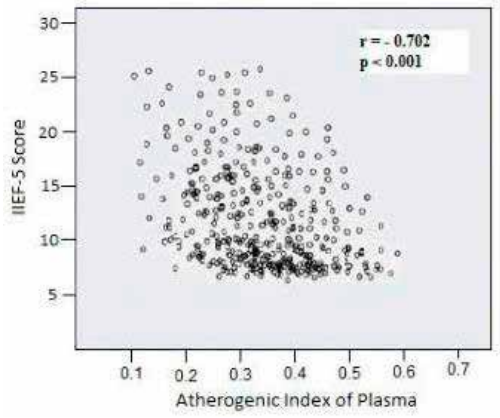

Table 1. Demographic characteristics and laboratory findings of participants

	ED (n = 86)	Control (n = 88)	p value
Age, years	54.2 ± 7.9	48.2 ± 8.3	0.433
Diabetes mellitus, n (%)	46 (53%)	43 (49%)	0.614
Hypertension, n (%)	35 (41%)	28 (32%)	0.145
Smoker, n (%)	23 (27%)	29 (26%)	0.713
BMI (kg/m2)	26.2 ± 3.3	26.4 ± 4.1	0.862
Blood glucose	132.2 ± 43.6	123.6 ± 63.3	0.076
Creatinine (mg/dL)	0.77 ± 0.15	0.73 ± 0.14	0.613
eGFR (mL/min/1.73m2)	89.1 ± 11.2	87.4 ± 13.2	0.372
Total cholesterol (mg/dL)	173.6 ± 19.5	192.5 ± 32.9	0.072
HDL (mg/dL)	56.2 ± 8.5	55.1 ± 9.7	0.159
LDL (mg/dL)	124.6 ± 19.2	87.2 ± 23.6	0.024
Total testosterone (ng/ml)	4.6 ± 1.2	5.0 ± 1.8	0.543
Free testosterone (pg/ml)	10.8 ± 4.7	11.2 ± 5.3	0.689
DHEA-S (µ/ml)	226.3 ± 66.3	193. ± 79.5	0.385
LH (mIU/ml)	4.3 ± 1.2	4.5 ± 0.9	0.536

OA-94 GLASGOW PROGNOSTIC SCORE MAY PREDICT COVID-19 IN PATIENTS WITH EARLY CT FINDINGS

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Adana City Training and Research Hospital

Objective: COVID-19 or coronavirus disease 2019 is an infectious respiratory disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Symptoms are manifested as fever in 90% of cases, fatigue and dry cough in 80% and shortness of breath in 40%. Although PCR tests are the gold standard due to the high accuracy rate, the evaluation of computed tomography (CT) of the chest (98%) shows a higher sensitivity compared to PCR tests (71%). Bilateral and peripheral ground-glass opacities constitute the most typical CT findings but they are not specific for the disease. While the lesions affected only one lung at the onset of the disease, it was observed that both lungs were affected in 88% of the patients in the following stages, which included 6-12 days after the appearance of symptoms. No radiological findings were reported in 18% of cases. In our study, we aimed to investigate whether inflammatory markers were predictive in patients with early CT findings.

Methods: A total of 100 patients with ground glass opacities or consolidation or no radiological findings in CT were included in the study. They were grouped according to localization of CT findings; group 1: lower lobes, 2: upper lobes, 3: patched, 4: no ct findings. The patients' laboratory results, diagnosis and duration of hospitalization, treatments were recorded.

Results: The mean age of the patients was 65 ± 15 (40 % female). 53 of them were hospitalized with acute coronary syndrome + covid pneumonia, 25 with heart failure + covid pneumonia and the remaining 12 with peri-myocarditis or valvular disease or pericardial effusion + covid pneumonia. Mean hospitalization time was 11.9 + 10.9 days. Hydroxychloroquine was given to all patients in the treatment. In addition to chlorokine, 9 patients received favipiravir, 4 patients received colchicine and 16 patients received influvir. There was no difference between the 4 groups in terms of age, diagnosis of hospitalization, and length of hospital stay (p= 0.576, p= 0.456 and p= 0.603 respectively). There was only a significant difference in glasgow prognostic score (GPS) value among the inflammatory markers between the groups. Group 1, those with lower lobe involvement which was thought to be the beginning of the disease in many publications, had higher GPS values (p=0,023).

Conclusion: When the seriousness and foresight of the covid pandemic is taken into consideration, using the glasgow prognostic score from inflam- matory markers may be more advantageous in early period of the disease.

Keywords: computed tomography, COVID-19, glasgow prognostic score

Ccharacteristic properties and laboratory findings of groups

	Group 1 (n=32)	Group 2 (n=15)	Group 3 (n=25)	Group 4 (n=28)	p
Age (years)	67.5 ± 13.8	65.4 ± 19.9	66.6 ± 17.7	61.3 ± 13.6	0.576
Diagnosis(n) ACS + covid HF + covid others	 15 10 7	 10 3 2	 11 8 6	 17 4 7	0.456
Hospitalization (days)	13.4 ± 13.0	9.0 ± 4.8	13.2 ± 11.5	10.5 ± 10.2	0.603
CRP (mg/L)	68.3 ± 54.5	73.8 ± 73.4	59.4 ± 38.9	58.3 ± 78.0	0.247
WBC (10^9/L)	15.7 ±7.5	15.4 ± 7.4	13.9 ± 6.2	12.6 ± 6.3	0.505
PLT (10^3/mm^3)	191.0 ± 80.1	206.0 ± 97.5	173.0 ± 90.3	194.0 ± 65.5	0.547
Troponin (pg/mL)	4075.4 ± 7875.0	5230.0 ± 9029.2	1290.0 ± 1980.2	1140.0 ± 4481.0	0.265
D-dimer (ng/mL)	5740.4 ± 7478.8	6630.5 ± 16144.5	6158.9 ± 11755.4	5013.6 ± 7107.1	0.506
NT- pro BNP (pg/mL)	12700.0 ± 11624.1	3189.7 ± 4535.3	7865.8 ± 8785.6	5488.6 ± 8979.7	0.226
GPS	1.4 ± 0.6	1.2 ± 0.4	1.2 ± 0.6	1.1 ± 0.8	0.023

OA-95 CARDIOLOGISTS STRESS REACTIONS AND NIGHTIME SLEEP ABNORMALITIES IN TURKEY (CORONA-TR TRIAL)

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Introduction: Advanced age patients with heart disease constitute the most important risk group in COVID 19 Pandemic. In addition, it has been learned with this pandemic that SARS-CoV2 has a direct cardiac effect. Among the cardiologists serving this challenging patient group, there is no study evaluating stress status yet.

Purpose: In this study, we examined the anxiety level and sleep quality of cardiologists in our country, in which the pandemic was the most intense and unknown.

Methods: This cross-sectional study included 347 cardiologists throughout Turkey from April 17, 2020, to April 20, 2020. The research was conduc- ted by means of a confidential on-line survey. All participants signed the informed consent, and voluntarily filled out the survey form. The research used the Turkish versions of the 7-item Generalized Anxiety Disorder Scale, 7-item Insomnia Severity Index and 9 –item Patient Health Questionnarie. The statistical analysis used the SPSS v.21 statistics packages. Descriptive statistics, X2 test, and T-test were also used.

Results: Of the total number of respondents, n= 193 (55.6 %) were aged 31 to 40 years and n= 84 (24.2%) were women. All of the participants were cardiologists n= 240 (79.2 %) working in university, training and research hospitals which are centers where heart patients and covid patients are more accepted and treated in Turkey.

A considerable proportion of participants reported symptoms of anxiety (n=188 (54.2 %), insomnia (n= 153 (44.1%), and depression (n= 247, %71.1). Women cardiologist reported more severe degrees of all measurements of anxiety symptoms and depression symptoms than male cardio- logists. Mean Generalized Anxiety Disorder scale scores among women vs male: 6.6 ± 3.5 vs 5.0 ± 4.3; P = 0.005; mean Insomnia Severity Index sco- res among women vs male doctors: 7.3±4.3 vs 6.9±4.6; P > 0.05; mean Impact of Event Scale–Revised scores among women vs male cardiologists:
8.0 ± 3.9 vs 6.8± 4.7; P = 0.02. Multivariable logistic regression analysis showed physicians living in the same home with a family member over 65 years of age had more anxiety and depression symptoms (95 %CI: 1.910-1.989, P: 0.01 and 95 % CI 1.05-2.32, P:0.03, respectively). On the other hand, the presence of children under the age of 18 in the physician's home did not cause additional anxiety and depression.

Conclusion: In this survey, during this outbreak, most of the cardiologists were found to be mentally challenged while continuing their profession. It is noteworthy that especially the anxiety and depression symptoms of female cardiologists are higher than their male counterparts. In this sense, it is im- portant that the governments that regulate the health policies of the countries provide the necessary psychosocial support by predicting that the stress disorder experienced by female cardiologists in the cardiology branch, where the number of male physicians are higher, can be difficult to express.

Keywords: Pandemia, stress, sleep abnormalities

OA-96 COMPLETE ATRIOVENTRICULAR BLOCK CAUSED BY LOPINAVIR AND RITONAVIR COMBINATION IN A COVID-19 PATIENT

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Objective: Covid-19 infection and related medical disorders are one of the most common medical problems in 2020. Both the disease itself and the drugs used in the treatment may cause serious cardiovascular disorders. Here you may find a case presenting with complete atrioventricular block due to 50mg ritonavir and 200 mg lopinavir combination treatment.

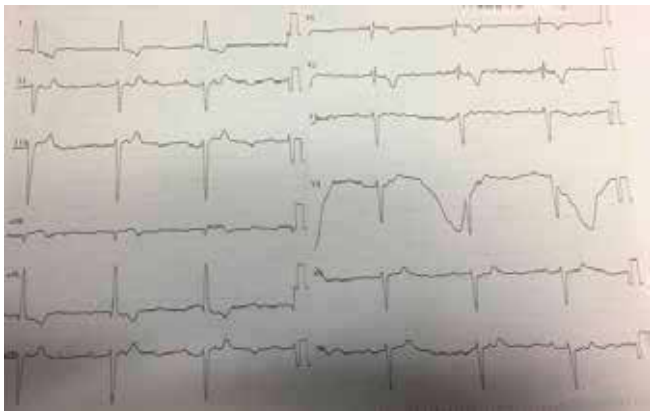
Case: 70 years old female patient with COVID-19 infection was consulted to our clinic because of dizziness and bradicardia on her electro- cardiogram (ECG). She had only history of chronic renal insufficiency and had been on heamodylasis treatment for the last 8 years. She was admitted 8 days before the incident, due to the coronavirus caused pneumonia. She was on ascorbic acid and Lopinavir/Ritonavir combination (8th day) treat- ment. On her examination she was slightly hipotensive (85/50mmHg) and heart rate was 29 bpm. ECG showed a complete atrioventricular (AV) block. (Figure 1) Administiration of bedside intravenous atropin (3mg total) had no effect on the rythm. On her laboratuary results, serum potassium levels were normal (5.07 mmol/L), creatinin, C-reactive protein, Troponin-I levels were increased (7.17 mg/dL, 159mg/L, 11490pg/mL respectively) and he- moglobin levels were slightly decreased (9.1 g/dL). After our evaluation we decided to perform a temporary intravenous pacemaker implantation and a coronary angiography to demonstrate possible underlying acute coronary syndrome. Coronary angiography revealed 80% stenosis in the middle portion of the left anterior decending artery, and others had non-crictical lesions. The patient had neither ischemic symptoms nor specific ischemic changes on her ECG and in addition to that beacuse of her current Covid-19 infection we postponed LAD intervention. After the procedure patient was transfered to our coronary care unit. When we checked her previous treatment lopinavir/ritonavir was the only possible drug for the atrioventricular block.Her current treatment for the COVID-19 infection was ceased and replaced by piperacillin+tazoactam and favipinavir by infectious diseases specialist. In the first three days at coronary care unit, patient was pacemaker dependant, on day three our patient generated her own rhtym (Figure 2), after that she stayed at coronary care unit two more days and showed no sign of bradicardia and then transfered to infectious diseases clinic.

Results: Complete atrioventrciularblock can be seen due to 50mg ritonavir and 200 mg lopinavir combination treatment and can be managed by a temporary pacemaker implantation.

Conclusion: As a cardiologist, we should be aware of possible side effects of the drugs used against Covid-19 and create a proper management of these patients. As in our case, immediate implatation of temporary pacemaker and ceasement of the lopinavir/ritonavir treatment helped our patient till generating her own cardicac rhtym on day three.

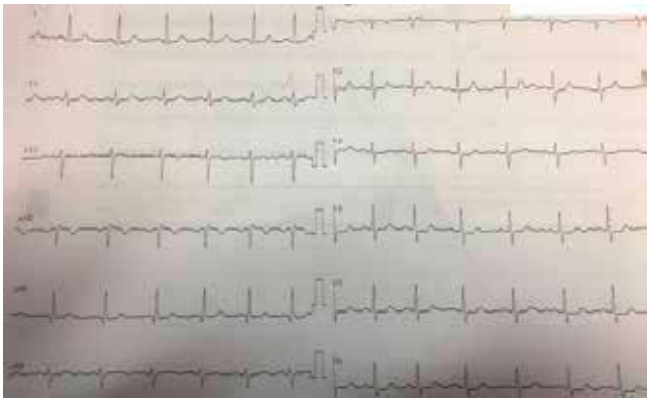
Keywords: Covid-19 infection, atrioventricular block, Lopinavir and ritonavir combination

Figure-1



ECG demonstrating ATRIOVENTRICULAR block

figure2



ECG after patient generated her own rthym

OA-98 PULMONARY ARTERIAL HYPERTENSION PRESENTED WITH COVID-19: A CASE REPORT

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Objective: Chronicity and comorbidity influence the risk of COVID-19 infection and the course of the disease. Idiopathic pulmonary arterial hyperten sion (IPAH) is a chronic and progressive disease leading to right heart failure and ultimately death if untreated. In this case report, we presented the case of COVID-19 developing in a patient with PAH. Case: A 69 year old female patient who was followed up for 4 years due to IPAH, presenting to the emergency department with progressive shortness of breath. It is learned that the patient has fatigue and described a dry cough for 2 weeks. Although CPAP was performed at home, the patient applied to the hospital when the sO2 value was <88%. Initial physical exam reveals temperature 37.2 °C, heart rate 105 bpm, respiratory rate 18, BP 135/85 mmHg, BMI 30.2 kg/m2, and O2 saturation 89% on room air. The baseline blood biochemistry- CBC and arterial blood gas analysis results are presented in Table 1. Electrocardiography showed multifocal atrial tachycardia (˜105 bpm). POCUS examination revealed left ventricular ejection fraction 60%, moderate tricuspid valve regurgitation, enlargement of the right heart cavities and severe pulmonary hypertension (sPAB: 80 mmHg). A chest X-Ray showed that moderate cardiomegaly, bilateral pneumonic consolidation areas and right costophrenic sinus closed due to increased pleural fluid (Figure-1)

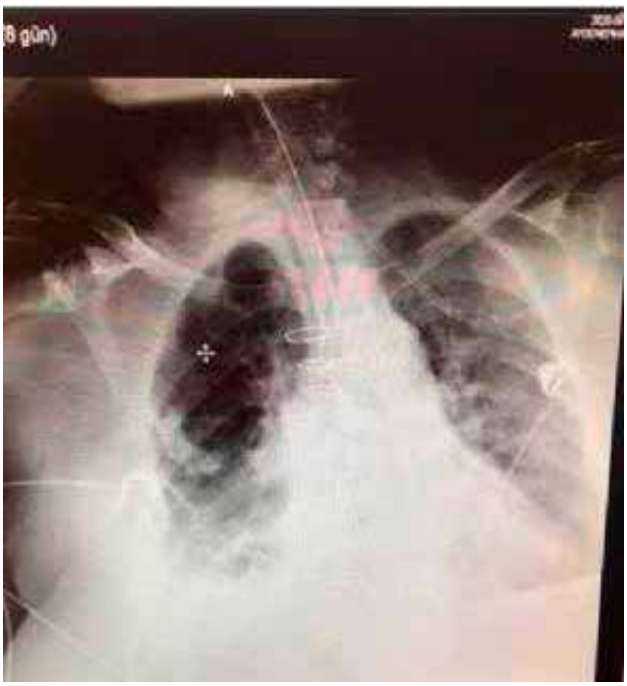
Chest CT (without IV contrast) revealed bilateral lower lobe consolidations at posterobasal segments with air bronchograms. Also, increased pleural fluid in dependent parts and linear pleural calcifications were appearent in both side. Evaluation of both lung parenchyma in appropriate windowing revealed increased density showing ground glass opacities spearing a few small subpleural foci at apexes (Figure-2).

In medical treatment, hydroxychloroquine-favipiravir (po), enoxaparine (sc) and piperacillin-tazobactam + linezolid (iv) combination were given. Routine inhaled iloprost treatment of the patient continued. Despite medical treatment, body temperature was determined as 38.1 C' on the 5th day. As the respiratory acidosis deepened on the 6th day of medical therapy, the patient was intubated. Also oliguria was added to the clinical situation. On the 9th day, the patient developed septic shock. Norepinephrine was started when the blood pressure was systolic 60 mmhg. Subsequently, the patient developed cardiopulmonary arrest. Despite mechanical and medical resuscitation, the patient became exitus.

Conclusion: Although it is reported that COVID-19 may progress seriously in PAH patients, the number of cases with two conditions in the literature is rare. Only 13 patients in the USA reported the association of PAH and COVID-19 and one of these patients died. In Turkey, this association was also reported as very rare. For this reason, the current case report becomes important.

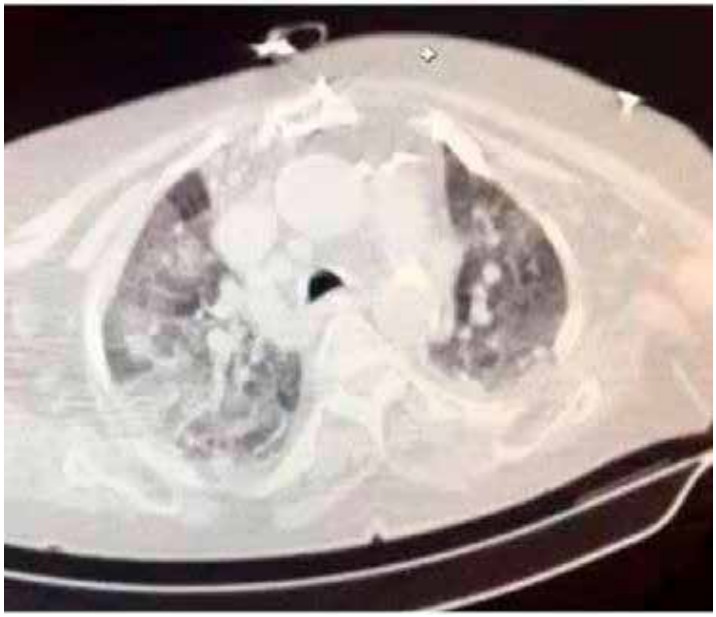
Keywords: pulmonary arterial hypertension, COVID-19, corona virus

Figure-1



Chest x ray were obtained at semierect position of patient in INTENSIVE care unite. Tracheal intubation and nasogastric tube were on right position. Cardiac enlargement were noticed. Right costophrenic angle were opacified due to increased pleural fluid. Left diaphragma were calcified and smooth. There were increased lung parenchyma densities mostly on the middle and lower parts of the left.. Chest x ray were obtained at semierect position of patient in INTENSIVE care unite. Tracheal intubation and nasogastric tube were on right position. Cardiac enlargement were noticed. Right costophrenic angle were opacified due to increased pleural fluid. Left diaphragma were calcified and smooth. There were increased lung parenchyma densities mostly on the middle and lower parts of the left.

Figure-2



Chest CT showed bilateral lower lobe consolidations at posterobasal segments with air bronchograms, increased pleural fluid in dependent parts and linear pleural calcifications were appearent in both side and ground glass opacities spearing a few small subpleural foci at apexes.

Table-1 Initial blood biochemistry, CBC and blood gas analysis resuts

Baseline	Result
CRP (mg/L)	305.60 (H)
Procalcitonin (µg/L)	2.97 (H)
LDH (U/L)	1296 (H)
AST (U/L)	128 (H)
ALT (U/L)	28
Total Bil (mg/dL)	1.612 (H)
Direct Bil (mg/dL)	1.010 (H)
D-Dimer (µg/L) 4283 (H)	4283 (H)
Fibrinogen (mg/dL) 439 (H)	439 (H)
Ferritin (µg/L) 1027 (H)	1027 (H)
Troponin (ng/L) 273.8 (H)	273.8 (H)
WBC (x10³/µL) 27.77 (H)	27.77 (H)
Hb (gr/dl) 9.0 (L)	9.0 (L)
Platelet(x10³/µL)	147
PH	7.30 (L)
PCO2 (mmHg)	48.4 (H)
PO2 (mmHg)	78.9 (L)
sO2 (%)	88 (L)
HCO3 (mEq/L)	35 (H)
Laktat (mEq/L)	1.4

OA-99 THE PROFILE OF HEALTHY ADULTS IN TURKEY; INVESTIGATION OF DIETARY HABITS, BIOCHEMICAL PARAMETERS

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Objective: W we aimed to evaluate lifestyle, eating habits and physical activity of the general adult population in Turkey.

Material-Methods: 202 subjects who underwent health check-up program were enrolled in our study. All participants filled out self-administered questionnaire to determine their dietary profile. Biochemical analysis, physical examination, ECG, and 2-D echocardiography of the each subject were performed.

Results: Characteristics of the study population are given in Table 1. We found negative relationships between age and fast food consumption (KW(x2)=34.86; p<0.001) and between age and soft drinks (KW(x2)=26.67; p<0.001). Subjects who were doing exercise regularly had lower BMI. There was an inverse relationship between BMI and education level of the subjects (KW(x2) =31.12; p<0.001). Subjects who had irregular and fast eating patterns had significantly higher BMI compared to that of the subjects who had regular, mostly regular and slow and normal eating patterns, respectively. (KW(x2) =7.12; p=0.028 and (KW(x2) =12.11; p=0.002, respectively). BMI of the subjects who had overeating episodes were higher relative to the subjects who had no overeating episodes (KW(x2) =61.38; p<0.001). Eating vegetables more than 3 times a week was associated with lower BMI (KW(x2)=11.11; p=0.025). Subjects who were doing exercise regularly had statistically significantly lower TC and TG levels and higher HDL levels than the subjects who were doing exercise occasionally or rarely. Eating vegetables at least 3 times a week was associated with lower TC, LDL and TG levels (KW(x2)=37.48; p<0.001, KW(x2)=45.02; p<0.001 and KW(x2)=20.97; p<0.001, respectively).

Participants who ate red meat more than 2 times a week had significantly higher TC and LDL levels than that of the participants who consume less amount of meat (KW(x2)=25.94; p<0.001 and KW(x2)=39.25; p<0.001, respectively). Eating fish more than once a week was associated with lower TC, LDL and TG levels (KW(x2)=24.31; p<0.001, KW(x2)=19.52; p<0.001 and KW(x2)=13.96; p=0.003, respectively). The increased number of ove- reating episodes was correlated with higher LDL levels (KW(x2) =85.97; p<0.00). Subjects who ate junk food at least 2 times a week had statistically significantly higher TC, LDL and TG levels (KW(x2)=10.07; p=0.01, KW(x2)=9.81; p=0.02 and KW(x2)=10.41; p=0.01, respectively).

Conclusion: Most of the subjects had three main meals per day, regular meal pattern and normal eating speed. The majority consumed salty or too salty food, drank coffee once a day and had overeating episodes at least once per week. Eating vegetables and red meat was found to be related better and worse lipid profiles, respectively. Subjects who had high consumption of fish had better blood lipid levels. Public campaigns and activities should be implemented, aimed at awareness of people about the fabulous benefits of healthy diet, healthy eating habits and lifestyle changes.

Keywords: Healty diet, Lifestyle, Eating habits

Table 1

parameter	value
Male (n, %)	85 (42.1%)
Female (n, %)	117 (57.9%)
Mean age (years)	40.05±11.76
BMI (kg/m2)	25.73±5.12
Smoking (n, %)	
never	150 (74.3%)
smoker	31 (15.3%)
gave up	21 (10.4%)
Alcohol consumption (n, %)	
Never/seldom	159 (78.7%)
Light drinking	33 (16.3%)
Moderate drinking	4 (2.0%)
Heavy drinking	6 (3.0%)
Heredity (n, %)	
no	167 (82.7%) 83ç2
yes	35 (17.3%) 16.8
Education (n, %)	
Elementary	47 (23.3%)
Middle/high	93 (46.0%)
College	62 (30.7%)
Income level	
Lower	36 (17.8%)
Middle	126 (62.4%)

Parameter	value
Upper	40 (19.8%)
Occupation	
Housewife	48 (23.8%)
Private company	78 (38.6%)
Government officer	15 (7.4%)
Minimal wage	28 (13.9%)
Unemployed	11 (5.4%)
Student	9 (4.5%)
Retired	13 (6.4%)
Marital status	
Single	56 (27.7%)
Married	129 (63.9%)
Divorced	17 (8.4%)
Exercise habits	
Never/rarely	48 (23.8%)
Occasionally	94 (46.5%)
Regularly	60(29.7%)
Total cholesterol (mg/dl)	195.94±45.36
Triglyceride (mg/dl)	158.58±104.56
HDL (mg/dl)	33.38±15.54
LDL (mg/dl)	118.74±45.74
Fasting glucose (mg/dl)	93.12±9.85

Demographic and clinical characteristics of the subjects.

OA-100 EFFECT OF NON-CARDIAC THORACIC SURGERY ON ELECTROCARDIOGRAPHY – MIGRATION OF HEART

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Background: Non-cardiac thoracic surgery (NCTS) might cause some electrocardiography (ECG) changes post-operatively. Some of these changes might be pathologic; however, some of them might not be related to a clinical condition and might be benign changes. The aim of this study was to investigate long-term ECG changes after NCTS.

Methods: This retrospective study included 210 patients who does not have any cardiac disease and had NCTS. After exclusion criteria were applied, 133 patients' pre- and post-operative (in between second and third month) ECGs were evaluated. Changes in P, QRS, T wave duration, axis, QRS-T angle, Tpe, QT intervals were evaluated.

Results: No significant difference was identified between pre-operative and post-operative ECG parameters (P>0.05). We further divided the patients into two groups as left-sided and right-sided thoracotomy. There was significant difference in QRS axis (pre-operative QRS axis = 23° [IQR: 67] and post-operative QRS axis= 39.5° [IQR: 61], P=0.003) between pre- and post-operative ECG for the patients with left-sided thoracotomy. Similarly, there was significant difference in QRS axis (pre-operative QRS axis = 30.5° [IQR: 69] and post-operative QRS axis= 10° [IQR: 65], P=0.001) between pre- and post-operative ECG for the patients with right-sided thoracotomy.

Conclusion: Non-cardiac thoracic surgery might cause benign ECG changes in patients post-operatively in long-term follow-up. These changes pro- bably related to anatomical positional change of the heart in which concluded as axial change in ECG depending on the surgical side. To be aware of these changes might lighten the decision making of the clinician during follow-up of these patients.

Keywords: Non-cardiac thoracic surgery, Electrocardiography, QRS axis

Table 1

Variables	Pre-Operation (n=133)	Post-Operation (n=133)	P value
Ventricular rate (/min)	75 (17)	78 (22)	0.07
P axis (°)	51 (36)	50 (33)	0.97
QRS axis (°)	42.5 (65)	36.50 (72)	0.59
T axis (°)	48 (39)	47 (50)	0.25
QRS duration (msec)	86 (16)	84 (16)	0.83
PR duration (msec)	140 (34)	142 (36)	0.91
QT interval (msec)	383 (44)	379 (48)	0.96
QTc (msec)	483 (43)	435 (41)	0.12
Tpe interval (msec)	78 (10)	79 (16)	0.64
Tpe / QT ratio	0.19 (0.04)	0.2 (0.05)	0.17
Tpe / QTc ratio	0.17 (0.03)	0.17 (0.04)	0.7
QRS-T angle (°)	-2.5 (54)	-10.5 (72)	0.3
Branch Block (%)			0.31
LBBB	2 (1.5%)	2 (1.5%)	
RBBB	7 (5.3%)	9 (6.8%)	
LPFB	1 (0.8%)	1 (0.8%)	

Continuous variables presented as median (Interqurtile range, IQR)

Pre- and POST-OPERATIVE ECG changes of the entire study cohort and their comparisons.

Table 2

Pre- and post-operative ECG changes in patients with left-sided non-cardiac thoracic surgery

Variables	Pre-Operation (n=33)	Post-Operation (n=33)	P value
Ventricular rate (/min)	73 (11)	75 (21)	0.3
P axis (°)	47 (41)	50 (33)	0.85
QRS axis (°)	**23 (67)**	**39.50 (61)**	**0.003**
T axis (°)	42 (34)	41 (48)	0.54
QRS duration (msec)	86 (15)	82 (16)	0.62
PR duration (msec)	143 (34)	146 (36)	0.91
QT interval (msec)	391 (39)	390 (48)	0.71
QTc (msec)	432 (34)	439 (24)	0.09
Tpe interval (msec)	80 (7)	80 (17)	0.64
Tpe / QT ratio	0.19 (0.02)	0.19 (0.04)	0.88
Tpe / QTc ratio	0.18 (0.02)	0.17 (0.04)	0.99
QRS-T angle (°)	-2 (62)	-15 (62)	0.42

Pre- and post-operative ECG changes in patients with right-sided non-cardiac thoracic surgery

Variables	Pre-Operation (n=32)	Post-Operation (n=32)	P value
Ventricular rate (/min)	75 (23)	80 (17)	0.51
P axis (°)	48 (38)	52 (39)	0.85
QRS axis (°)	**30.5 (69)**	**10 (65)**	**0.001**
T axis (°)	47 (58)	58 (64)	0.63
QRS duration (msec)	86 (16)	82 (14)	0.33
PR duration (msec)	150 (33)	145 (30)	0.38
QT interval (msec)	**385 (60)**	**374 (40)**	**0.024**
QTc (msec)	435 (42)	437 (34)	0.51
Tpe interval (msec)	77 (5)	78 (10)	0.59
Tpe / QT ratio	0.19 (0.05)	0.2 (0.03)	0.25
Tpe / QTc ratio	0.17 (0.03)	0.17 (0.02)	0.94
QRS-T angle (°)	21(52)	-18 (55)	0.42

Pre- and POST-OPERATIVE ECG changes in patients with left-sided and right-sided non-cardiac thoracic surgery

OA-101 FACTORS AFFECTING THE DECISION OF INITIATING MEDICAL TREATMENT FOR HYPOTENSION DURING SPINAL ANESTHESIA IN THE ELDERLY

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OBJECTIVE: It is a well-established fact that spinal anesthesia (SA) is associated with an increased risk of intraoperative hypotension due to exces- sive sympathetic blockade. Reduced organ perfusion during these hypotensive episodes may thereupon culminate in perioperative adverse event occurrence. Intensive antihypotensive medical treatment (AHM) with fluids and vasoconstrictor agents is administered to avoid these complications. However, the decision of using these drugs is a complex entity, and the precision of this issue should be clarified. Here we sought to identify the parameters related to AHM during SA in the elderly.

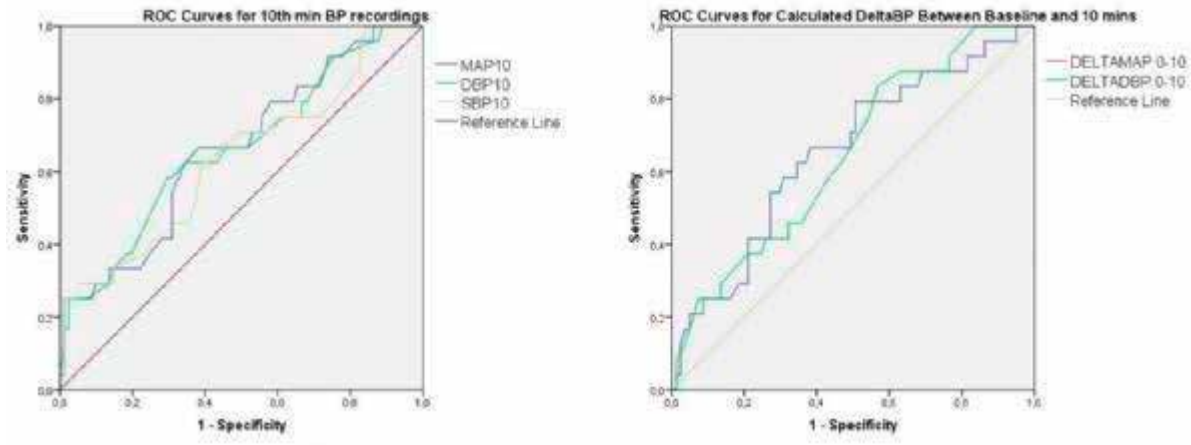
METHODS: The data of 105 patients who had undergone total hip replacement surgery with SA were retrospectively analyzed. Hypobaric bupivacaine and fentanyl mixture was intrathecally injected for providing unilateral SA in the entire population. Demographic features and intraoperative hemody- namical recordings were collected from the log files. The measurements at baseline and the first 60 minutes of operation (with 10 min intervals) were noted. Bolus fluid infusion with ephedrine injection (6 mg) was the preferred method to manage hypotension in this study.

RESULTS: AHM was required in 24 (22.9%) patients. The median age was 81 (9) years in our sample population and 68.6% of the subjects were fe- male. Demographic features apart from gender were comparable between patients to whom AHM was or was not administered (Table 1). The fraction of female patients was higher in the AHM (+) group (63% vs. 87.5%; p=0.02). Systolic (SBP), mean (MBP), and diastolic blood pressures (DBP) at 10th minute were significantly lower in the AHM (+) group (p<0.05). Reduction in MBP (ΔMBP0-10) and DBP at this time-point (ΔDBP0-10) was also more evident in this group (12.5 [17] mmHg vs. 21 [19] mmHg; p=0.02 and 10 [14] mmHg vs. 12 [18.5] mmHg; p=0.03; respectively). According to the results of ROC analyses, these five parameters significantly predicted AHM use (p<0.05). AUC for SBP, MBP, DBP, ΔMBP0-10, and ΔDBP0-10 were: 0.63, 0.66, 0.66, 0.65, and 0.65; respectively (Figure 1).

CONCLUSION: Female gender and early blood pressure reduction were associated with AHM in our sample population. The latter finding distinguis- hed this study from its previous counterparts by identifying a certain time interval as a possible indicator of AHM during SA.

Keywords: Ephedrine, Hypotension, Spinal anesthesia, Total hip replacement

Figure 1



ROC curves demonstrating the predictive performance of 10th min blood pressure recordings and pressure changes between baseline and 10 min to estimate the use of antihypotensive medication. DBP diastolic blood pressure; MAP, mean blood pressure; SBP, systolic blood pressure.

Table 1

	Overall(n=105)	AHM (-)(n=81)	AHM (+)(n=24)	P value
Age, years; Median (IQR) α	81 (9)	81 (11)	81.5 (7)	0.54
Gender, female; % (n) β	68.6 (72)	63 (51)	87.5 (21)	0.02*
BMI, kg/m<; Mean±SD δ	27.1±4.9	26.8±5	27.9±4.4	0.37
ASA score; Median (IQR) α	3 (1)	3 (1)	3 (1)	0.85
ASCVD; % (n) β	28.6 (30)	29.6 (24)	25 (6)	0.66
Hypertension; % (n) β	52.4 (55)	50.6 (41)	58.3 (14)	0.51
Diabetes Mellitus; % (n) β	18.1 (19)	21 (17)	8.3 (2)	0.16
eGFR, ml/min/1.73 m2; Median (IQR) α	69 (32)	70 (32)	58.5 (42)	0.12
Procedure time, mins; Median (IQR) α	95 (40)	95 (40)	95.5 (39)	0.80
RBC Transfusion; % (n) β	8.6 (9)	6.2 (5)	16.7 (4)	0.11
SBPbaseline, mmHg; Mean±SD δ	145.5±25.6	146.4±24.9	142.4±28.2	0.50

	Overall(n=105)	AHM (-)(n=81)	AHM (+)(n=24)	P value
SBP10min, mmHg; Mean±SD δ	122.6±26.1	125.9±25.5	111.3±25.5	0.02*
SBPaverage, mmHg; Mean±SD δ	124.9±18.3	126.2±18.2	120.6±18.1	0.19
SBPminimum, mmHg; Mean±SD δ	106.2±20.1	107.4±19.3	102.4±22.4	0.29
ΔSBP0-10min, mmHg; Median (IQR) α	20 (29.5)	20 (24.5)	32 (28)	0.14
SBPreduction, %; Mean±SD δ	25.6±14.8	25.3±14.1	26.5±17.1	0.74
MBPbaseline, mmHg; Mean±SD δ	100.3±15.3	100.8±15.3	98.6±15.6	0.54
MBP10min, mmHg; Mean±SD δ	85.4±16.1	87.8±15.3	77.3±16.4	<0.01*
MBPaverage, mmHg; Mean±SD δ	88±11.8	88.8±11.7	85.2±12	0.18
MBPminimum, mmHg; Mean±SD δ	76.7±13.6	77.5±13	74±15.5	0.27
ΔMBP0-10min, mmHg; Median (IQR) α	15 (19)	12.5 (17)	21 (19)	0.02*
MBPreduction, %; Median (IQR) α	22 (18)	22 (18)	23 (18)	0.55
DBPbaseline, mmHg; Median (IQR) α	78 (15)	78 (15)	77.5 (18.5)	0.98
DBP10min, mmHg; Median (IQR) α	65 (15)	69 (18.5)	60 (22.5)	0.02*
DBPaverage, mmHg; Median (IQR) α	68 (13)	68.5 (13)	67.5 (14)	0.57
DBPminimum, mmHg; Median (IQR) α	59 (12.5)	59 (11.5)	59 (20)	0.59
ΔDBP0-10min, mmHg; Median (IQR) α	11 (14.5)	10 (14)	12 (18.5)	0.03*
DBPreduction, %; Median (IQR) α	21.5 (17.5)	20 (17.5)	22 (20.5)	0.64
HRbaseline, beats/min; Median (IQR) α	80 (25)	82 (28)	82 (28)	0.15
HRaverage, beats/min; Median (IQR) α	78 (21.5)	80 (22)	73 (20)	0.09
Surgical Apgar Score;; Median (IQR) α	6 (2)	6 (2)	6.5 (3)	0.64

*Demographic and clinical features of patients who were grouped according to the use of INTRAOPERATIVE ANTIHYPOTENSIVE medication. α Mann-Whitney U test was used for comparison. β Chi-square test was used for comparison. δ Unpaired-t test was used for comparison. * represents statistical significance. AHM, ANTIHYPOTENSIVE medication; ASCVD, atherosclerotic CARDIOVASCULAR disease; BMI, body mass index; DBP, diastolic blood pressure; eGFR, estimated glomerular filtration rate; HR, heart rate; IQR, interquartile range; MBP, mean blood pressure; RBC, packed red blood cells; SBP, systolic blood pressure.*

OA-103 RELATIONSHIP BETWEEN ESTABLISHED CARDIOVASCULAR RISK FACTORS AND MULTI VESSEL CORONARY ARTERY DISEASE IN TURKISH CATHETERIZED PATIENTS

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Objective: Established risk factors are good predictors of the occurrence of coronary artery disease (CAD), but their correlation with severity of the disease persists argumentative and may vary among across ethnic groups. In this study, we examined the prevalence of cardiovascular risk factors in Turkish patients with attested CAD and attempted to clarify which of these factors are associated with the severity of the disease.

Methods: We studied 2433 consecutive CAD cases, retrospectively. The extent of the disease was calculated based on the existence or lack of multiple (>=2) diseased vessels from conventional coronary angiography findings.

Results: In the study population 36.5% of patients were between 60-69 years and approximately two thirds of patients (76.9%) were men. Hyper- tension, diabetes mellitus and hyperlipidemia were the most common cardiovascular risk factors (CRFs), present in 54.8%, 43.2% and 50.3% of patients, respectively. Multiple logistic regression analysis showed that diabetes mellitus, advanced age since 6th decade and male sex significantly raised the risk of multivessel CAD: odds ratios of 1.29 (1.08-1.54; p=0.004), 1.35 (1.1-1.66; p=0.004) respectively. Other traditional CRFs (hypertension, dyslipidaemia) were not correlated with CAD severity.

Conclusion: Diabetes mellitus appeared as the most powerful risk factor predicting multivessel disease in Turkish patients.

Keywords: Turkish, ethnic, angiography. Multi vessel, coronary

Table 1: Logistic regression analysis for multivessel coronary artery disease

		All (n=2433)	Two or three vessel disease			Multivariable logistic regression		
			Yes (n=1636)	No (n=797)	*P*	Odds ratio	95 % CI	*P*
Male sex		1870 (76.8)	1274 (77.8)	596 (74.7)	0.09	1.35	(1.1-1.66)	0.004
Diabetes mellitus		1053 (43.2)	740 (45.2)	313 (39.2)	0.005	1.29	(1.08-1.54)	0.004
Hypertension		1334 (54.8)	897 (54.8)	437 (54.8)	0.99	-	-	-
Dyslipidemia		1226 (50.3)	823 (50.3)	403 (50.5)	0.9	-	-	-
Age	6.decade	744 (30.5)	485 (29.5)	259 (32.4)	<0.001	3.53	1.85-6.75	<0.001
	7.decade	888 (36.4)	625 (38.2)	263 (32.9)		4.52	2.37-8.63	
	8.decade	422 (17.3)	319 (19.4)	103 (12.9)		6.01	3.08-11.73	
	9.decade	68 (2.7)	56 (3.4)	12 (1.5)		9.33	3.83-22.73	

Data: number (%), CI: confidence interval

OA-104 HEART SURGERY PLANNING AND CLINICAL EXPERIENCES IN COVID-19 PANDEMIC

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Introduction: As the COVID-19 pandemic progresses, considerable experience has been gained in managing infected patients, minimizing contamina- tion, personal protection measures and patient management in all branches. In addition to adult cardiac surgery planning during pandemic, definition of emergency and elective heart surgeries has gained importance. Different risk factors and clinical conditions of the patients should be evaluated in the light of the current guidelines, and a specific strategy should be developed for each patient. The risk balance of delaying the definitive treatment of patients with a pronounced cardiovascular disease that may benefit from open heart surgery and the risk of these patients from getting nosocomial infection should be considered. In addition, suggestions for transition from traditional face to face patient reviews to remote patient management and outpatient follow-up are given. The aim of the article is to provide suggestions about the management of patients planned for adult cardiac surgery procedure during the COVID-19 pandemic and to present our experiences during the pandemic.

Material-Method: The data of patients undergoing open heart surgery in our Cardiovascular Surgery Clinic between 15 March 2020 and 30 June 2020 were reviewed retrospectively. The priority level and surgical timing of the patients were planned in accordance with Table 1.

Results: Open heart surgery was performed in 36 patients, 8 of whom were urgent and 28 were elective. Of the urgently operated patients, 3 were covid positive and 5 were covid negative. Twenty-two of the patients who were operated on electively were covid-negative, 6 patients who were covid- positive were operated after completion of their treatment after diagnosis. CABG operation was performed in 27 patients, CABG + MVR in 1 patient, CABG + AVR in 1 patient, MVR in 1 patient, ASD closure in 1 patient, assortment of aorta from 3 patients, benthall in 1 patient, and benthall + total arch replacement in 1 patient. Exitus was not seen in patients who were operated on electively.

One of the 8 patients who were operated on urgently was peroperative exitus and 3 were exitus in the postoperative intensive care unit. In the intensive care follow-up, 2 of 3 patients with exitus were found to be covid positive. The average length of hospitalization was 5 days, and the average length of hospital stay was 10.2 days.

Conclusion: Unprecedented times call for unprecedented measures and teamwork. Priority and appropriate surgical timing are important in the COVID-19 outbreak. In this period, all kinds of surgical procedures should be done with great care and patient consent must be obtained in any case. During the COVID-19 pandemic, sharing the experiences of the heart centers by collecting data continuously will contribute to the creation of guide- lines on similar critical care-related issues.

Keywords: Covid-19, Pandemic, Heart Surgery

Table 1

Level of Priority I: Elective Surgery (Routine admission for operation)
Coronary artery disease (CAD) • Patients with asymptomatic or stable angina
Valvular heart disease • Chronic and hemodynamically stable patients
Aneurysmal vascular disease (AVD) • Unruptured and hemodynamically stable patients
Peripheral arterial disease (PAD) • Patients with intermittent claudication • Chronic limb ischemia with rest pain or tissue loss • Asymptomatic bypass graft/stent restenosis
AV Access for hemodialysis • Fistulas revision for malfunction/steal • AV fistula and graft placement for dialysis
Level of Priority II: Urgent Surgery (Patients who have not been electively admitted for operation but who require intervention or surgery on the current admission for medical reasons. These patients cannot be discharged without a definitive procedure)
CAD • Acute Coronary Syndromes (NSTEMI, STEMI, USAP)(Timing of the procedure should be decided on an individual basis, according to symptoms, hemodynamic stability, coronary anatomy, and signs of ischemia and failed/unsuitable for percutaneous intervention) such as; severe left main (LM) or three-vessel CAD involving the proximal left anterior descending artery (LAD).
VHD • Acute aortic regurgitation • Acute mitral regurgitation • Obstructive prosthetic valve thrombosis in critically ill patients without serious comorbidity • Active endocarditis
AVD • Thoraco-abdominal aortic aneurysm(TAAA)/abdominal aortic aneurysm(AAA) with acute contained rupture with hemodynamically stable patients • Rapid progression of the aneurysmal diameter (TAAA/AAA >6-6.5 cm) • Symptomatic peripheral artery aneurysm • Pseudoaneurysm (not suitable for thrombin injection and ultrasonography guided compression)

PAD • In the absence of neurological deficit, revascularization is indicated within hours after initial imaging in a case-by-case decision • Infected arterial prothesis without overt sepsis hemorrhagic shock, or impending rupture • Amputations for infection/necrosis and non-salvageable limb • Symptomatic acute mesenteric ischemia
AV Access for hemodialysis • Thrombosed or non-functional dialysis Access • Infected Access • AV fistulas revision for ulceration • Tunneled catheter
Pericardial tamponade or postcardiotomy syndrome with hemodynamically stable patients
Level of Priority III: Emergency (operation before the beginning of the next working day after decision to operate)
CAD • Patients with a patent ischemia-related artery (IRA) but with unsuitable anatomy for percutaneous coronary intervention (PCI), and either a large myocardial area at jeopardy or with cardiogenic shock. • Continuing or recurrent ischemia, ventricular arrhythmias, or hemodynamic instability • Patients with myocardial infarction (MI)-related mechanical complications who require coronary revascularization
VHD • Valve disorder (regurtitation/stenosis/endocarditis) with acute cardiac heart failure
AVD • TAAA/AAA and peripheral aneurysm with rupture with hemodynamically unstable patients
PAD • Acute limb ischemia (in the case of neurological deficit)
Dissection of aorta • Type A aortic dissection • Complicated type B aortic dissection
Pericardial tamponade or postcardiotomy syndrome with hemodynamically unstable patients
Level of Priority IV: Salvage (patients requiring cardiopulmonary resuscitation en route to the operating theatre or prior to induction of anesthesia)

Definition of surgical timing and LEVEL of prior

OA-105 EVALUATION OF PULMONARY EMBOLISM INCIDENCE AND RISK FACTORS IN CORONAVIRUS -19 INFECTION

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Objective: Coronaviruses are enveloped non-segmented positive-sense RNA viruses,and since the previous epidemics of SARS-CoV and MERS, are considered to be the major pathogens causing atypical pneumonia.Coronavirus -19 (COVID-19) may predispose venous thromboembolism due to excessive inflammation, hypoxia, immobilization and diffuse intravascular coagulation. We evaluated the incidence and characteristics of acute pulmonary embolism (PE) in all COVID-19 patients admitted to our hospital.

Methods: From March 15st to April 30st, 56 patients (38 males, 59.2 ± 15.8 years) who were admitted to the hospital with the diagnosis of COVID-19 pneumonia that underwent a contrast enhanced thorax computed tomography examination(CTPA) for due to clinical deterioration or sudden drop in oxygen saturation during their follow-up at our hospital site were retrospectively included. Patients who had additional diseases such as current cancer or surgery that could cause pulmonary embolismwere excluded. All patients included in the study received hydroxychloroquine, azithromycin and prophylactic dose of low molecular weight heparin(LMWH) therapy.

Results: The incidence of the PE wasfound %25(n=14). Male gender, smoking and chronic kidney failure was independent predictor of PE (p=0.027,p=0.002,p=0.003).There was no significant difference in laboratory findings between D-dimer, ferritin, and CRP levels in patients with and without pulmonary embolism. Troponin values were significantly higher in patients with pulmonary embolism than patients without pulmonary em- bolism.(244.7±135.3,42.5±13.5,p=0.01) During follow-up, the increase in D-dimer was not sufficient to predict pulmonary embolism.Although the need for intensive care unit(ICU) was higher in patients with pulmonary embolism than patients without pulmonary embolism(21% vs 5% p<0.05), no significant difference was observed between the two groups in terms of mortality(7% vs 5% p>0.05).

Conclusion: 25% incidence of pulmonary embolism in patients with COVID-19 infections is remarkably high. Therefore, contrast-enhanced thorax CT should be performed in patients with low saturation in clinical follow-up regardless of risk factors. Our findings reinforce the recommendation to strictly apply pharmacological thrombosis prophylaxis in all COVID-19 patients.

Keywords: Pulmonary Embolism, COVID-19, Incidence, SARS-CoV2

Baseline characteristics

Demographic variable	PE (+) N=14	PE(-) N=42	p
Gender(man)	10 (71%)	24(50%)	0,027
Age (years)	58.7±17.2	58.9±15.0	NS
Hypertension	5 (35%)	9 (21%)	NS
Diabetes Mellitus	2(14%)	7(16%)	NS
Smoking	9(64%)	15(35%)	0.002
Cardiovascular diseases	2(14%)	6(14%)	NS
Chronic heart failure	1(7%)	4(9%)	NS
Chronic renal failure	2(14%)	2(4%)	0.003

OA-107 ELECTROLYTE IMBALANCE AND ITS EFFECT ON QTC INTERVAL IN PATIENTS HOSPITALIZED WITH COVID-19

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Objectives: Studies have shown that electrolyte abnormalities can be seen in Corona Disease-2019 (COVID-19) patients and are associated with the severity of the disease. We aimed to investigate the electrolyte imbalance such as Hypocalcemia and hypokalemia in patients hospitalized with COVID-19 and its effect on the QTc (corrected QT) interval.

Methods: 185 hospitalized patients with COVİD-19 whose diagnosis was confirmed by real time-PCR and/or Computed Tomography of the chest were included in the study. The potassium and calcium measurements on the admission and third day of hospitalization were recorded. The QTc interval measurement was performed on the admission (QTc-B) and the 3rd-day Electrocardiography (QTc-AT). We constructed two separate models to assess the relationship of QTc-AT with baseline and 3rd-day potassium and calcium levels after adjusting common clinical and biological plausible predictors (age, gender, QTc prolonged drug(azithromycin, antiviral treatment), loop diuretic, beta-blocker, congestive heart failure(CHF), SIRS criteria>=2, myocardial injury, magnesium).

Results: The median age was 43(31-56 IQR) and 102(55,1%) of patients were male. Demographic and clinical characteristics of patients were given in Table 1. Median baseline potassium level was 4,0 mEq/L (3,7-4,3 IQR), and corrected calcium level was 8,48 mg/dl (8,24-8,73 IQR), whereas the 3rd-day median potassium level was 4,2 mEq/L (3,9-4,5 IQR), and corrected calcium level was 8.42 mg/dl (8.16-8.70 IQR). Potassium < 3.5 mEq / L was observed in 16 (8.6%) patients and the number of patients with <=4 mEq / L was 99 (53.5%). Hypocalcemia (corrected calcium <8.5 mg/dl) was observed in 95 (51%) patients.The median QTc-B interval was found as 427 ms (409-447 IQR) whereas the median QTc-AT interval was found as 438 ms (414-459 IQR). Median 9 ms (-5-28 IQR) prolongation was observed in the QTc interval, which was statistically significant (p <0.001). There was a significant relationship between QTc-AT and baseline potassium level, potassium level on the 3rd day (respectively β coefficient=-2,268, 95%CI -27,211- -1,737, p value=0,027, β coefficient=-2,551, 95%CI -26,437- -3,229, p value=0,013) but there was no significant relationship with baseline and 3rd-day calcium level (respeectively β coefficient=-0,782, 95% CI -20,459- 8,941, p value=0,437, β coefficient=0,707, 95% CI -8,618 – 18,068, p value= 0,482).

Conclusion: Electrolyte disorders such as hypocalcemia and hypokalemia are common in patients hospitalized with COVID-19. After treatment, a significant prolongation was observed in the QTc interval and a significant relationship was observed between QTc-AT and potassium levels, but no significant relationship with calcium was observed. In patients with QTc prolongation and hypokalemia, the risk of arrhythmia can be reduced with potassium replacement, and drugs that prolong QTc such as hydroxychloroquine and azithromycin may continue.

Keywords: COVID-19, QTc interval, Hypokalemia, Hypocalcemia

Table 1

Age(year)	43 (31-56)
Gender(male)	102 (55,1%)
Hypertension	28 (15,1%)
Diabetes mellitus	27 (14,6%)
Smoking	58 (28,6%)
Congestive heart failure	6 (3,2%)
Coronary artery disease	11(6%)
Chronic respiratory disease	12 (6,5%)
Myocardial injury	5 (2,7%)
>=2 SIRS criteria	40 (21,6%)
Radiographic finding of pneumonia	150 (81%)
Lenght of stay hospital (day)	6 (5-8)
İntensive care unit admission	25 (13,5%)
Hydroxychloroquine	185 (%100)
Azithromycine	111 (%60,9)
Favipiravir	23 (%12,4)
Potassium replacement	17 (9,1%)
Calcium replacement	9 (4,9%)
Temperature (°C)	37,2 (36,8-37,7)
Systolic/Diastolic blood pressure	110 (100-120) / 70 (60-80)
White blood cell (103/uL)	6,60 (4,78-9,02)
Neutrophil (103/uL)	4,25 (2,89-7,22)
Lymphocyte (103/uL)	1,51 (1,12-2,03)
Hemoglobin g/dL	13,7 (12,3-14,7)
C-reactive protein mg/L	13,5 (2-50)

Procalsitonin (ng/mL)	0,06 (0,04-0,14)
D-dimer (ng/mL)	175 (108-330)
Magnesium (mg/dL)	1,94 (1,82-2,09)
Potassium baseline / 3rd-day (mmol/L)	4 (3,7-4,3) /4,2 (3,9-4,5)
Albumin baseline / 3rd-day (g/L)	43 (40-45) / 40 (37-43)
Total calcium baseline / 3rd-day (mg/dL)	8,70 (8,40-9,00) / 8,40 (8,10-8,80)
Corrected calcium baseline / 3rd-day (mg/dL)	8,48 (8,24-8,73) / 8,42 (8,16-8,70)
Heart rate baseline (beat/min)	87 (76-99)
Heart rate 3rd day (beat/min)	80 (74-90)
QRS duration baseline (ms)	92 (84-102)
QRS duration after treatment (ms)	95 (88-104)
QT interval baseline (ms)	360 (334-375)
QT interval after treatment(ms)	378 (360-400)
QTc interval baseline (ms)	427 (409-447)
QTc interval after treatment (ms)	438 (414-459)

Demographic and clinical characteristics of patients(n=185)

OA-108 GIANT, RIGHT- SIDED INTRACAVITARY CARDIAC METASTASES OF A UTERINE LEIOMYOSARCOMA

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Background: Cardiac metastases (CM) refer to a secondary malignant tumor involving any structural compenent of the heart.The incidence of CM ranges from 2.3% to 18.3%.Pericardial metastases are the most common type of CM, only about 5% of CM are endocardial/intracavitary lesions.Any malignant tumor might metastasize to the heart, but the most common are carsinomas rather than sarcomas.Uterine leiomyosarcomas (UL) are rare and secondary CM are even rarer.Here, we will present intracavitary CM of a UL.

Case: A 62-year-old woman was diagnosed with UL.Total abdominal hysterectomy and bilateral salpingo-oophorectomy was performed 4 years ago.Lung and liver metastases were detected after 9 months.She received radiotherapy and chemotheraphy cures for 4 years.She was referred to cardiology polyclinic for the evaluation of dyspnea and fatigue which eventually increased for the last month.Physical examination was significant for a mesocardiac 2/6 systolic murmur.Electrocardiogram showed an incomplete right bundle branch block with a sinus rhythm.Transthoracic echocar- diography visualized a giant, irregular polipoid shaped, heterogeneous, semi-mobile mass seemed to spread from neighboring mediastinal structures to the right cardiac chambers by direct invasion.The mass was filling the right ventricle (RV) causing a septal bounce and a coaptation defect of the tricuspid cusps resulting severe tricuspid regurgitation.The mass was also invading the RV outflow tract (RVOT) and the main pulmonary artery (MPA).Furthermore, another smaller mass was observed in the right atrium (RA). Transesophageal echocardiography showed a mass of 62x38 mm in the RV extended into both RVOT and the MPA, also another mass of 7x10 mm, orginated from the endocardium in the RA.On cardiac magnetic resonance imaging a polipoid mass of 95x66x70 mm, starting from the right atrioventricular groove and extending into the RA, RV, PA causing sub- valvular pulmonary stenosis was observed.RA and basal 1/3 free wall of the RV were also invaded by the masses. Multiple metastases in lung and liver;medial invasion of the mass to the right lung upper lobe, into the pericardium, RA, RV and PA together with tumor thrombi; pericardial masses partially extending to the left ventricular cavity were detected on computed tomographic angiography.Considering the patient's history and widesp- read of the mass on multi-imaging modalites, preliminary diagnosis was metastases of a UL.The cardiac council decided to evaluate the patient for surgery after completion of the oncological treatment because of accompanying metastatic pathologies; however, the patient discharged voluntarily from our department to continue her treatment in oncology outpatient clinics.She has been followed since then in our hospital.

Conclusion: Physicians should be keep in mind that leiomyosarcomas can cause intracavitary cardiac metastases and may progress with nonspecific symptoms,which can be confused with the symptoms of primary malignancy, even if it is very large.

Keywords: cardiac metastasis, cardiac metastases, cardiac tumor, cardiac malignancy, uterine leiomyosarcoma

figure 1

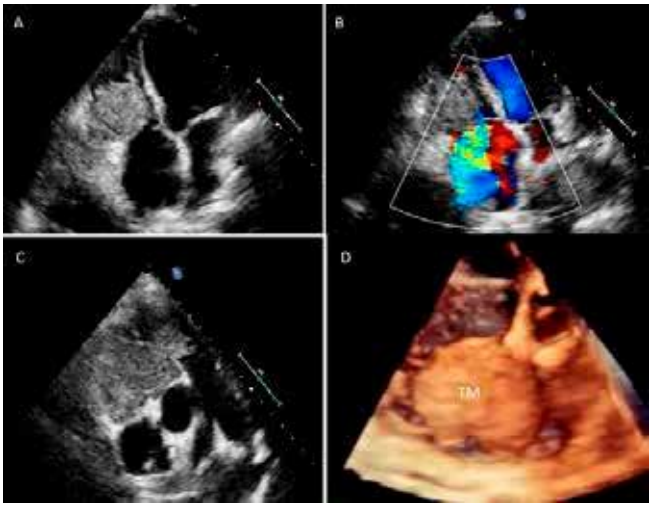

Figure 1A: The giant, irregular polipoid shaped, heterogeneous, semi-mobile right VENTRICULAR mass in transthoracic echocardiography Figure 1B: The mass filling the right VENTRICLE causing a coaptation defect of the tricuspid cusps resulting SEVERE tricuspid regurgitation and the right atrial mass in transthoracic echocardiography Figure 1C: Right VENTRICULAR mass extending into the right VENTRICLE outflow tract and main pulmonary artery, right atrial mass in transthoracic echocardiography. Figure 1D: 3D echocardiographic VIEW of the right VENTRICULAR mass extending into right VENTRICULAR outflow tract

figure 2

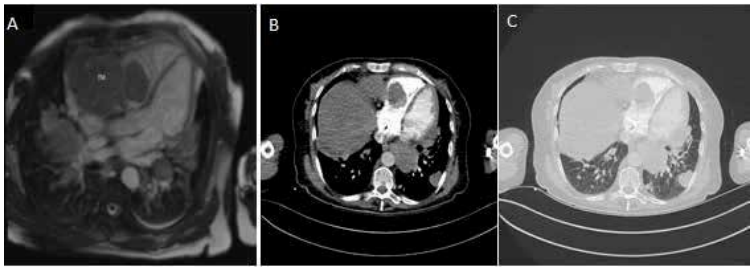

Figure 2A: Metastases spread from neighboring mediastinal mass into the right heart chambers on cardiac magnetic resonance imaging Figure 2B and 2C: Lung and cardiac metastases of the uterine leiomyosarcoma on computed tomographic angiography

OA-109 A DISCRETE SUBAORTIC MEMBRANE HIDING BEHIND THE VALVE

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A 73-year-old women was referred to our out patient clinics because of preoperative evaluation before a total knee replacement surgery. The patient had no cardiac symptoms such as angina pectoris, dyspnea and syncope. Her medical history included hypertension. On physical examination, an ejective systolic murmur (grade 3/6) was heard at the right upper sternal border that radiated to the neck. On electrocardiograph, there was incomp- lete left bundle branch block and left axis deviation. Two- dimensional transthoracic echocardiography (TTE) showed left venticular (LV) hypertrophy which was more prominent at the base of the interventricular septum (diastolic thickness=18 mm) with normal systolic function. The aortic valve was thickened and calcified with mildly reduced opening in TTE (Figure 1A). The gradient didn't increase with the valsalva maneuver. Continous wave Doppler obtained a maximal velocity of 4,27 m/s (Figure 1B). Systolic anterior motion of mitral leaflets was not visualized. First, the patient was considered to have valvular aortic stenosis. Left heart catheterization and coronary angiography were performed for the next step.The patient had no significant coronary artery stenosis. Catheter pullback revealed a 57 mmHg of peak to peak gradient between LV cavity and the aorta. During cardiac catheterization, pigtail catheter was easily replaced into the LV cavity by our inverventional cardiologist since the aortic valve was not heavily calcified. We decided to perform transesophageal echocardiography (TEE) to further investigate the cause of the obstruction. A discrete subaortic membrane with a size of 11,2*3 mm was observed below the aortic valve(Figure 2A,2B). Interestingly, aortic valve mobility was mildly impaired (planimetric area: 2,9 cm<) due to mild calcification of the degenerative aortic cusps. Considering these findings, the patient was referred to our cardiac surgery department. Subaortic membrane resection was planned.

Discrete subaortic membrane commonly presents in children but rarely in adults. It is characterized by the formation of a fibrous membrane obs- tructing the LVOT. Visualization of the membrane may be difficult by TTE in elderly patients. It might be difficult to distinguish a DSM from valvular stenosis in elderly patients since aging; itself causes degeneration and calcification of the valves. If the site of obstruction is not well visualized on the initial echocardiographic study, a TEE should be performed to confirm the diagnosis.

We reported a rare case of obstructive DSM in an elderly women confused with valvuler aortic stenosis. DSM diagnosis may be overlooked with TTE in patients concomitant valvuler aortic stenosis. TEE and 3D echocardiography might play an important role in the visualization of the membrane. Although DSM is rarely seen in elderly patients, it should be kept in mind whenever a LVOT obstruction is detected.

Keywords: discrete subaortic membrane, aortic valve, left ventricular outflow tract obstruction

Figure 1

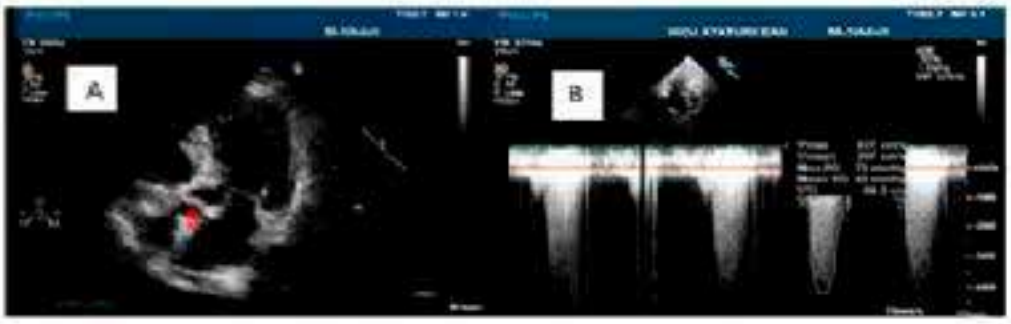

Figure 1A. Calcific aortic valve in transthoracic echocardiography (TTE). Figure 1B. Maximal aortic velocity with continous wave Doppler

Figure 2

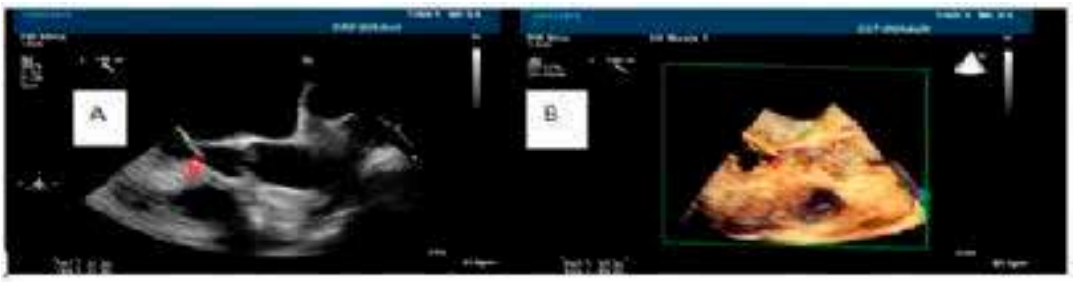

Figure 2A. Discrete subaortic membrane in transesophageal echocardiography (TTE). Figure 2B. Discrete subaortic membrane in 3D TEE

OA-110 RELATIONSHIP BETWEEN LEFT ATRIAL REMODELING INDEX AND STROKE SEVERITY IN PATIENTS WITH ACUTE ISCHEMIC STROKE

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Objectives: The cardiovascular manifestations of acute ischemic stroke have been well known. Apart from preexisting cardiac disorders, cardio- vascular complications are most likely mediated by an increased sympathetic activity. It was reported that LA functional remodeling is feasible to predict cardiovascular outcomes as well as LA structural remodeling. However, it is uncertain whether the combined assessment of LA functional and structural markers is related with stroke severity. In this study, we aimed to investigate the relationship between frontal left atrial remodeling index and stroke severity in patients with acute ischemic stroke.

Methods: A total of 80 patients (45 men, 35 women, 67 ± 15 years) with acute ischemic stroke were included in the study. NIHSS scores were calculated. Patients were divided into 2 groups according to the NIHS score (Group 1; NIHSS < 16, Group 2; NIHSS >= 16). Demographic, clinical, and laboratory data were collected for all pati- ents. Cardiac evaluation with two-dimensional echocardiography was performed within 48 hours of admission to neurology care unit. Peak systolic LA strain was evaluated using 2D speckle tracking imaging. We calculated the average value for LA peak systolic strain obtained from the apical four-chamber, two-chamber, and apical long axis views. LA volume was indexed to body surface area (LAVI). We defined the ratio of LA peak systolic strain and LAVI as LA remodeling index (LARI = [LA peak systolic strain/ LAVI]).

Results: There were no significant differences among clinical parameters of patients (Table 1). LARI was significantly higher in Group 1 patients than Group 2 patients (Table 2).

Conclusion: Our results suggested that, left atrial remodeling index is associated with stroke severity on admission in patients with acute ischemic stroke.

Keywords: Left atrium, remodeling, stroke severity

Clinical characteristics and echocardiographic parameters of patients

Variables	Group-1 (NIHSS <16) n=58	Group-2 (NIHSS >= l6 Group) n=22	p Value
Age (year)	65.4 ± 12.7	69.8 ± 17.7	NS
Gender (F/M)	32 / 26	13 / 9	NS
Hypertension	28 (48%)	13 (59%)	NS
Diabetes Mellitus	14 (24%)	6 (29%)	NS
Smoking	7 (12%)	4 (16%)	NS
Dyslipidemia	9 (15%)	4 (18%)	NS
LVDd (mm)	51.2 ± 6.3	54.6 ± 6.8	NS
LVDs (mm)	40.5 ± 4.2	43.2 ± 5.8	NS
LVEDV (mL)	86.05 ± 17.76	95.43 ± 24.34	NS
LVESV (mL)	41.13 ± 12.47	44.78 ± 14.26	NS
LAD (mm)	39.5 ± 4.3	42.4 ± 4.6	NS
RAD (mm)	32.6 ± 3.4	34.7 ± 3.7	NS
RVDd (mm)	28.1 ± 2.5	30.7 ± 2.8	NS
LVEF (%)	59.2 ± 5.6	51.4 ± 6.3	0.024
LA GLS (%)	34.48 ± 9.73	26.27 ± 7.41	0.019
LAVI (ml/m2)	35.3 ± 12	53.4 ± 23	0.028
LARI (%)	0.95 ± 0.37	0.49 ± 0.27	0.032

OA-111 GIANT LEFT VENTRICULAR METASTASIS OF UTERINE LEIOMYOSARCOMA MIMICKING ACUTE CORONARY SYNDROME

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Introduction: Uterine leiomyosarcoma (UL) is an uncommon soft tissue neoplasm that frequently metastasizes to the lung, bone and brain. This may be the first report of metastasis of UL to the myocardium.

Case: A 56-yearold female patient was admitted with exertional angina and dyspnea of 3 days duration. Her medical history included hypertension and metastatic UL, which had been diagnosed and managed by a debulking operation and radiotherapy 7 years previously. Physical examination revealed a Levine grade 4 pansystolic murmur at the apex, and a mass formation measuring approximately 3x3 cm in the right lower abdominal quadrant. Her medications included perindopril, metoprolol and anastrazol. The electrocardiogram showed newly-developed symmetric T wave inversions on infe- rior and lateral leads (Figure 1A). Level of Troponin I was 0.4 ng/mL (upper limit <0.06) on admission. The patient was hospitalized with a diagnosis of acute coronary syndrome. Coronary angiography revealed no obstructive coronary lesion (Figure 1B and 1C). Transthoracic echocardiography showed severe mitral regurgitation and a mass lesion measuring 6x7 cm compressing the posterolateral wall of the left ventricle (Figure 2A and 2B). Multisliced computed tomography showed a large, non- calcified cystic lesion constituting left ventricular metastasis of UL (Figure 2C and 2D). Endomyocardial biopsy from this lesion is very troublesome and may cause fatal complications. After diagnosis of cardiac leiomyosarcoma, invasion was undertaken and the patient referred to an oncologist.

Discussion: While primary tumors of the heart are very rare, secondary involvement of the heart in extracardiac tumors is 20 to 40 times more common. UL is a rare malignancy. Frequent sites of metastasis include the lung, bone and brain. Metastases of UL to the heart are extremely rare. CT presentation of leiomyosarcoma includes large, non-calcified cystic lesions. Although these are not specific, when present with a primary UL, they should suggest consideration of metastasis in the patient. There are reports in the literature of intracardiac and pericardial invasion by UL. However, to our knowledge, this case is the first presentation of UL metastasis to the myocardium.

Keywords: Cardiac metastasis, leiomyosarcoma, cardiac imaging

Figure 1

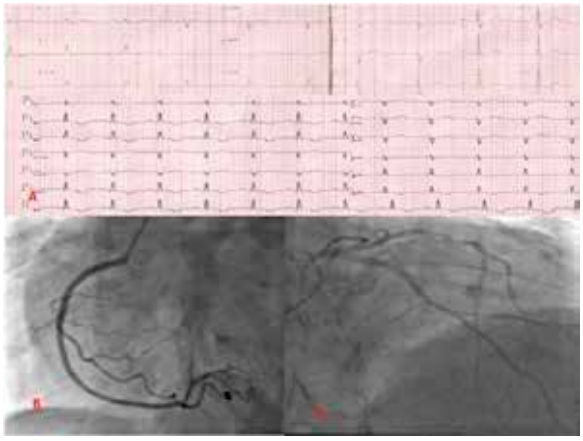

Figure 1: A) ECG showing newly DEVELOPPED symmetric T WAVE INVERSIONS on inferior and lateral leads that was considered ischemic heart disease. Angiographic VIEWS: (B) LAO VIEW shows no OBSTRUCTIVE lesion on the right coronary artery (C) RAO cranial VIEW shows no OBSTRUCTIVE lesion on the LAD or Cx arteries.

Figure 2

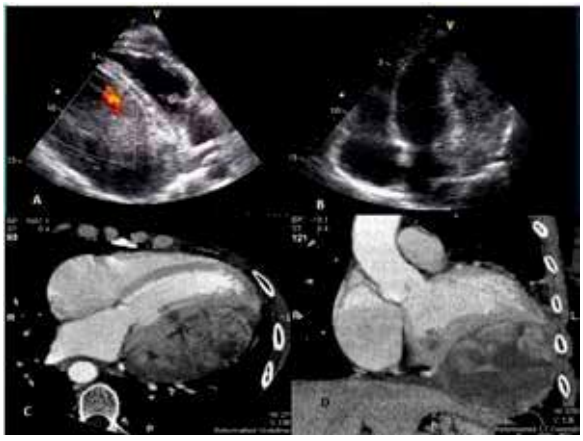

Figure 2 A:Transthoracic echocardiography, parasternal long-axis VIEW showing the mass lesion of diameter 6.4 cm compressing the posterolateral wall of the left VENTRICLE. (B) Transthoracic echocardiography, apical 4-chamber VIEW, showing the mass lesion compressing the lateral wall of the left VENTRICLE and eccentric mitral regurgitation. (C) CT showing the large, non-calcified, cystic lesion metastasis on the posterolateral wall of the left VENTRICLE. (D) CT showing the large, non- calcified, cystic lesion metastasis on the inferior wall of the left VENTRICLE.

OA-112 CASEOUS CALCIFICATION OF THE MITRAL ANNULUS; SCARY IMAGE DURING ROBOTIC SURGERY

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Introduciton: Caseous calcification of the mitral annulus is a very rare form of mitral annular calcification (MAC). Caseous calcification of the mitral annulus (CCMA) accounts for 0.63% of all cases and 0.06-0.07% of the total population. It is usually seen in elderly and female patients. It mostly affects the posterior leaflet of the mitral valve, thickens the valve, and may cause mild stenosis and/or insufficiency. CCMA is composed of a mixture of calcium, fatty acid and cholesterol, similar to soft periannular wide calcification, tumor-like, and has a toothpaste-like structure.

Case: A 67-year-old woman presented with dyspnea. TTE revealed a 27 * 21 mm mass on the mitral valve posterior leaflet. The patient underwent TEE and a lobulated 30 * 20mm mass was detected on the mitral valve posterior leaflet ventricular surface. The mass on the mitral valve caused moderate MS and mild MR. The patient underwent cardiac MRI and CT, and a mass formation of 42*29*20 mm calcified amorphous tumor on the ventricle surface of the mitral valve posterior leaflet was revealed. The patient was discussed in the cardiovascular surgery council and the decision of mass resection was decided. In the patient who underwent a robotic mass resection, it was observed during the procedure that the mass that completely covered the mitral valve posterior leaflet was gelatinous, disintegrated uncontrolled. The surgeon changed his plan and decided to perform mitral valve replacement. The pathology report was reported as caseous calcification and the patient died due to ischemic stroke in the postoperative period.

Discussion: The pathogenesis of CCMA remains unclear. Hypercholesterolemia and the dissolution of lipid-laden macrophages may be implicated in liquefaction necrosis. The name “caseous” comes from the cheese-like or toothpaste-like consistency of the mass, which is sterile and composed of fatty acids, cholesterol, and calcium. Cardiac MRI may help in differentiating MAC from CCMA and should perform. The first treatment option should be conservative treatment because of surgical complications of the procedure. Surgical intervention may be considered for a patient with embolic phenomena, valvular dysfunction or to rule out the possibility of a tumor.

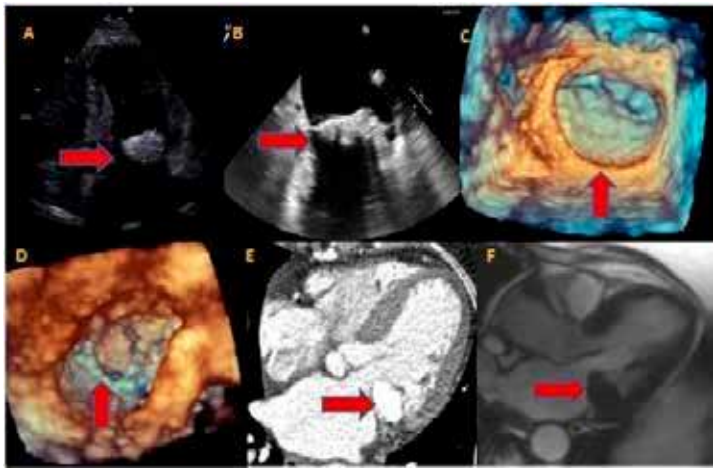
Conclusion: In summary, CCMA represents a rare, underappreciated variant of MAC that should be differentiated from an abscess or tumor. Although echocardiography is the mainstay imaging modality for diagnosis of CCMA, multimodality imaging, including TEE, cardiac CT, and CMR, can be used to confirm the diagnosis and avoid unnecessary surgery

Figure 1: Multimodality imaging of the caseous calcification of the mitral annulus

Figure 2: Toothpaste-like structure of caseous calcification of the mitral annulus in the robotic surgery image.

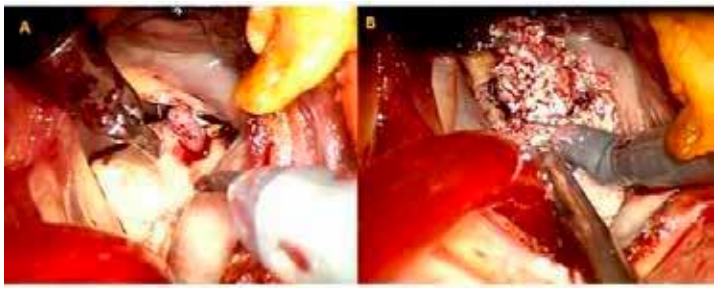
Keywords: Caseous calcification, mitral annulus, toothpaste-like structure

Figure 1



Multimodality imaging of the caseous calcification of the mitral annulus

Figure 2



Toothpaste-like structure of caseous calcification of the mitral annulus in the robotic surgery image

OA-113 PREDICTORS OF NEW-ONSET ATRIAL FIBRILLATION FOLLOWING CORONARY ARTERY BYPASS SURGERY: RETROSPECTIVE SINGLE CENTER STUDY

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Introduction: Atrial fibrillation (AF) occurs in 5-40% patients after coronary artery bypass graft surgery. AF increases mortality and morbidity in the post-operative period. AF worsens a patient's hemodynamic status and increases the risk of congestive heart failure (CHF), embolic events and longer intensive care unit (ICU) stays. We aimed to determine AF occurrence after coronary artery bypass graft surgery (CABG) in our hospital, and its association with clinical features, premedication, ICU stay and mortality.

Methods: Between August 2019 and February 2020, one hundred and thirty five patients were included in our study. Preoperative demographical features and premedications were noted. Postoperative heart rhythms, intensive care unit staying days and mortality ratios were analyzed.

Results: 96 male (71.1%) and 39 female (28.9%) were evaluated. Mean age of males were 61.3 (47-83) and 65.6 (51-76) for females. 39 AF were detected (71.7% were male) and mostly seen in patients with higher body mass index, who has hypertension and diabetes mellitus diagnosis. Preoperative betablocker and statin usage seems to be protective against postoperative AF occurrence, but statistically not significant. ICU staying days and mortality rates were statistically higher in AF patients (Table).

Conclusion: Atrial fibrillation increases mortality and morbidity in the postoperative period. Many risk factors have been investigated in the past such as advanced age, male gender, genetic predisposition, chronic obstructive pulmonary disease, chronic renal insufficiency, diabetes mellitus, rheumatic heart disease, previous cardiac surgery, metabolic syndrome, obesity, absence or withdrawal of betablocker, statin or ACE inhibitor treatment. Our findings were similar to these risk factors but we have to evaluate larger population to give more reliable results statistically.

Keywords: Atrial fibrillation, coronary artery bypass graft surgery, mortality

Table: Characteristics of the population

	Atrial Fibrillation n: 39 (28.8%)	No Atrial Fibrillation n: 96 (71.1%)	p value
Male	28 (71.7%)	66 (68.7%)	0.027
Female	9 (28.3%)	30 (31.3%)	
BMI (kg/m2)	29.8	27.1	0.142
LVEF (%)	52	56	0.341
LA diameter (mm)	41	39	0.211
Hypertension	27 (69.2%)	57 (59.3%)	0.032
Diabetes mellitus	19 (46.1%)	42 (43.7%)	0.194
Preoperative betablocker usage	18 (46.1%)	54 (56.2%)	0.095
Preoperative ACE inh usage	21 (53.8%)	56 (58.3%)	0.217
Preoperative statin usage	9 (23%)	29 (30.2%)	0.128
ICU (day)	6.8	3.4	<0.05
Mortality	2 (5.1%)	1 (1%)	0.072

BMI: Body mass index, LVEF: Left ventricular ejection fraction, LA: Left atrium, ACE inh: Angiotensin converting enzyme inhibitör, ICU: Intensive care unit

OA-114 INVESTIGATION OF THE EFFECTS ON N-BUTLY 2 CYANOARCRYLATE ON VASCULAR ENDOTHELIUM

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[1]*Alanya Eğitim ve Araştırma Hastanesi*

SUMMARY

Objective: N-Butyl 2 Cyanoacrylate (NBCA) is currently used as an adhesive or embolizer in vascular structures. In this study, the effects of NBCA on vascular endothelium were investigated.

Method: After the by-pass measurement was taken in the saphenous vein and internal mammarian artery (IMA), which were removed during coronary bypass, the unused parts were taken and NBCA was applied to these vessels. One piece of sample was also separated to form a control group. Samples taken from the proximal and distal parts of the application area were evaluated histopathologically.

Results: Physiological arterial and venous endothelial appearance and normal cell structures were determined in the untreated group. The most prominent endothelial cell damage was detected in the arterial (IMA) administration group. Although endothelial damage was evident in the saphenous vein group compared to the control group, it was determined to be more limited compared to the IMA group. In addition, when the vascular endothelial growth factor (VEGF) expression was evaluated in the samples taken, there was no increase in the venous group, but a significant increase was found in the arterial group.

Conclusion: Although NBCA causes both venous and arterial damage, it has been determined that it causes much more significant chemical damage on arterial structures. In particular, the detection of structural deterioration in the samples taken around the application area, the possibility of reaction in the proximal and distal of the vascular structure to be embolized should not be forgotten in the vascular use of this agent.

Keywords: N-Butyl 2 Cyanoacrylate, endothelial damage, VEGF, surrounding endothelium

POSTER PRESENTATIONS

PP-1 EVALUATION OF GALECTIN-3 IN PATIENTS WITH HEART FAILURE AND ITS RELATIONSHIP WITH NT-PROBNP LEVELS: A CASE-CONTROL STUDY

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[2]*Kolan Hospital, Cardiology Department, İstanbul, Turkey*

Aim: Cardiac fibrosis, a pathological phenomenon in cardiac remodeling, is associated with heart diseases. The aim of this study was to investigate the relationship of Galectin-3 with N-terminal pro B-type natriuretic peptide (NT-pro-BNP) levels in patients with heart failure (HF).

Methods: A total of 50 patients with HF (patient group) and 30 subjects with normal ejection fractions (control group) were enrolled in this study. Serum galectin-3 levels and plasma NT-pro-BNP were measured in all subjects. Demographic and clinical characteristics of the patients were recorded. The Galectin-3 and NT-pro-BNP levels were compared between the groups.

Results: Patients with HF had significantly higher Galectin-3 and NT-pro-BNP levels than control subjects (37.5 (18.0-80.0) versus 12.00 (8.00-14.00), P<0.001; 467.0 (1157.5-5107.2) versus 50.0 (35.0-102.0), P<0.001, respectively). Galectin-3 was correlated with serum glucose, creatine, left atrial diameter, ejection fraction and NT-pro-BNP in the HF patients. There was a positive and significant correlation between the NT-pro-BNP and Galectin-3 levels (r=0.742, P=0.001). In addition, there was an inverse and significant correlation between the ejection fraction and Galectin-3 levels (r=-0.556, P=0.001).

Conclusion: The present study demonstrates that galectin-3 and NT-pro-BNP levels are significantly higher in patients with systolic HF. Galectin-3 was positively and significantly correlated with the NT-pro-BNP and inversely correlated with ejection fraction with HF. Our study also showed that Galactin-3 was strongly correlated with NT-pro-BNP levels.

Correlation between NT-pro-BNP and Galectin-3 levels

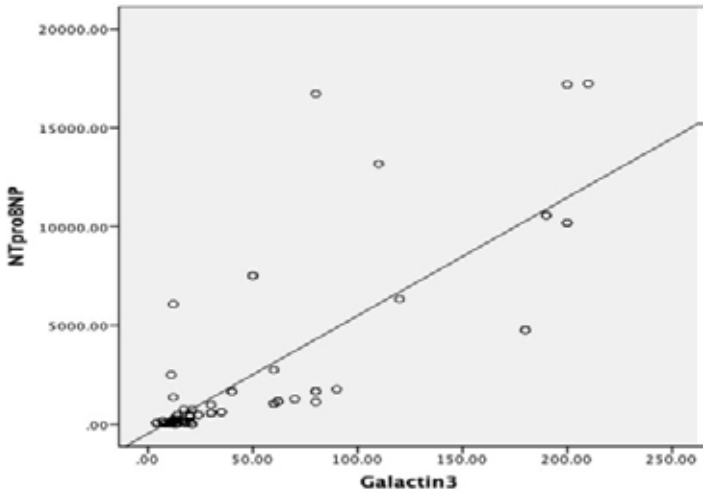

Table-1 Demographic and clinical characteristics of the study population.

	Control (n=30)	Heart Failure (n=50)	p
Age (years)	51.30±6.13	66.04±12.24	<0.01
Male %(n)	63(19)	46(23)	0.13
Hypertension %(n)	20(6)	36(18)	0.13
Diabetes mellitus %(n)	13(4)	30(15)	0.09
Hyperlipidemia %(n)	20(6)	44(22)	0.02
CAD %(n)	20(6)	100(50)	<0.01
Serum glucose (mg/dl)	139.07±2.39	139.08±2.32	0.98
Creatinine (mg/dl)	0.70 (0.60-0.83)	0.90 (0.80-1.00)	<0.01
Hemoglobin (g/dL)	13.63±1.96	12.62±2.16	0.03
LVEDD (cm)	4.80 (4.50-4.85)	5.05±0.54	0.04
LVESD (cm)	3.20 (3.10-3.42)	3.75±0.62	<0.01
LA (mm)	36.30±2.55	42.34±4.31	<0.01
Ejection Fraction (%)	58.10±3.74	37.70±5.58	<0.01
NT-pro-BNP (pg/ml)	50.00 (35.00-102.00)	467.00 (1157.50-5107.25)	<0.01
Galactine-3 (pg/ml)	12.00 (8.00-14.00)	37.50 (18.00-80.00)	<0.01

CAD, Coronary artery disease; LVEDD, Left ventricular end-diastolic diameter; LVESD, Left ventricular end-systolic diameter; LA, Left atrium.

PP-2 LOW SUPEROXIDE DISMUTASE AND CATALESE IS ASSOCIATED MALONDIALDEHYDE AND ISCHEMIA MODIFIED ALBUMIN IN PATIENTS WITH NON-ST ELEVATED MYOCARDIAL INFARCTION

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Background: Acute coronary syndrome is a manifestation of cardiac ischemia and results in myocardial injury and necrosis in line with the duration of ischemia. Excessive production of Reactive Oxygen Species (ROS) is proposed to mediate ischemia-reperfusion injury. This study aimed to assess the IMA (ischemia modified albumin), MDA (malondialdehyde), SOD (superoxide dismutase), and catalase in patients with non-ST elevated myocardial infarction (NSTEMI).

Materials-Method: The present study included 55 patients with NSTEMI and 55 healthy subjects prospectively. IMA, MDA, SOD, and catalase levels were measure from venous blood obtained from each patient within three h after the onset of symptoms. Angiography was performed within three days after the hospitalization. Significant coronary artery lesions were determined.

Results: IMA (3.14 ± 0.06 vs. 1.49 ± 0.03) and MDA (3.14 ± 0.06 vs. 1.49 ± 0.03) were higher, and SOD (1.10 ± 0.03 vs. 2.31 ± 0.02) and catalase (0.54 ± 0.02) vs. 0.22 ± 0.02) were lower in NSTEMI patients than control subjects. There was a significant correlation among IMA, MDA, SOD and catalase. Moreover, IMA values correlated positively with the multiple coronary lesions (r = -0.339 p = 0.011; r = 0.329 p = 0.014). There was no significant correlation among the MDA, SOD, catalase and affected coronary vessel numbers.

Conclusion: Our data reveal that levels of MDA and IMA were increased, and SOD and catalase levels were decreased significantly in patients with NSTEMI.

Table-1. The demographic and clinical data of the study population

	NSTEMI (n=55)	Control (n=55)	P
Age (years)	63.6±12.6	46.9±9.3	<0.001
Male/Female n	25.9±3.3	25.5±2.6	0.51
Hypertension n(%)	24(44)	15(27)	0.07
Troponin (ng/ml)	3.7(1.6-22.0)	0.016±0.005	<0.001
Hemoglobin (g/dL)	14.3±1.7 1	13.2±2.0	0.002
IMA(U/ml)	1.8±0.3	0.9±0.1	<0.001
MDA (µmol/L)	3.14±0.06	1.49±0.03	<0.001
SOD (U/ml)	3.14±0.06	2.31±0.02	<0.001
Catalase (U/ml)	0.22±0.02	0.54±0.02	<0.001

IMA (ischemia modified albumin), MDA (malondialdehyde), SOD (superoxide dismutase)

PP-3 THE RELATIONSHIP BETWEEN EPICARDIAL FAT TISSUE THICKNESS AND RED BLOOD CELL DISTRIBUTION WIDTH IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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[1]*NISANTASI UNIVERSITY*
[2]*TEKDEN HOSPITAL*
[3]*KAFKAS UNIVERSITY*

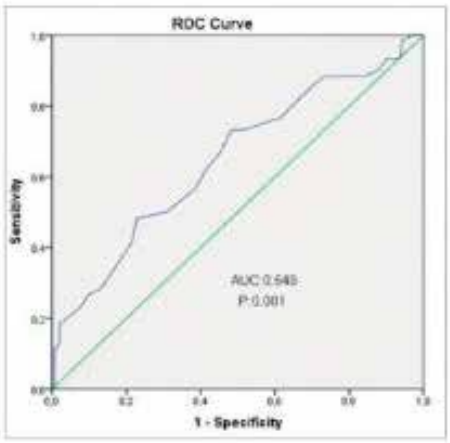
Aim: We aimed to investigate the possible differences in variables such as RDW and EFT thickness between diabetic and healthy patients and to assess the correlation between those parameters.

Materials-Methods: This single center prospective study which included 159 diabetic patients and 153 healthy controls. 2D and M mode echocardiographic examination was performed using standard apical, parasternal, and subcostal views in all the study participants.

Results: Clinical and biochemical parameters of the patiens are shown in Table 1. Diabetic patients had increased EFT thickness (4.3 ± 1.1 mm vs. 3.7 ± 1.0 mm P = 0.001), higher RDW values (13.5 ± 0.7 vs. 13.2 ± 0.7 P = 0.001), LDL C, TG, and HgA1c levels compared to their healthy counterparts. On correlation analysis, RDW and EFT (0.384, P < 0.001) were strongly positively correlated. RDW was also positively correlated with LDL C, TG, and HgA1c levels and negatively correlated with HDL C level. RDW value of 13.55 predicted EFT thickness >5 mm with a sensitivity of 61.7% and specificity of 58.8% (P: 0.001, Area under the curve [AUC]: 0.649, CI 95%: 0.564–0.733) [Figure 1]. HgA1C value of >7 predicted EFT thickness >=4.15 mm with a sensitivity of 60.7% and specificity of 60.4% (AUC: 0.651 vs. P < 0.001) [Figure 2]. According to the power analysis, the strength to EFT in predicting the diabetic patients (alpha value = 0.05 and 95% confidence) was 99.9%.

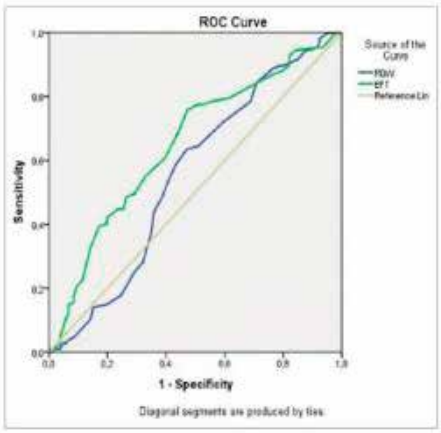
Conclusion: Our study showed that EFT thickness increased in diabetic patients, independent of age, gender, waist circumference, BMI, and it was correlated with RDW. EFT has been suggested to influence atherosclerotic lesion progression, plaque vulnerability, and destabilization. EFT thickness have been found to be in correlation with the fasting blood glucose levels. Diabetic patients have increased EFT thickness as compared to nondiabetic participants. It has a positive correlation with HbA1c levels EFT and CIMT values of the asymptomatic obese patients were shown to be decreased after significant weight loss. Diabetic patients also have higher RDW values when compared with normal participants. Chronic hyperglycemia occurring in DM has several effects on erythrocytes, including glycosylation of hemoglobin, impaired deformability, increased aggregation, and decreased circulatory half life. Nada et al. reported that RDW levels were significantly high in diabetic patients than in control subjects and it was positively correlated with HbA1c levels. DM is a metabolic disease which imposes substantial socioeconomic burden as a result of its complications. We showed that type II diabetic patients had higher EFT thickness and RDW levels when we compared them with the normal individuals. Moreover, EFT thickness was positively correlated with RDW. Measurement of EFT thickness and RDW in patients with DM may provide additional prognostic information.

FIGURE 1



Receiveroperating characteristic curve analysis of red blood cell distribution width value to predict epicardial fat tissue >= 5 mm

FIGURE 2



Receiveroperating characteristic curve analysis of red blood cell distribution width value to predict epicardial fat tissue >= 5 mm

Clinical and biochemical characteristics of patiens.

	DIABETIC GROUP (n=159)	CONTROL GROUP (n=153)	p
Age (years)	51.9±7.6	51.4±6.5	0.061
Female, n (%)	94 (62.6)	86 (56.2)	0.343
Male, n (%)	65 (37.4)	67 (43.8)	0.343
LVEF (%)	64.3±8.2	65.4±7.4	0.86
Smokers, n (%)	43 (28.6)	42 (27.7)	0.831
BMI (kg/m2)	28.5±1.3	28.4±1.2	0.062
SBP (mmHg)	130.3±10.3	126.3±11.4	0.08
DBP (mmHg)	77.0±7.7	73.5±8.1	0.018

	DIABETIC GROUP (n=159)	CONTROL GROUP (n=153)	p
TG (mg/dl)	149.7±13.1	139.9±13.2	<0.001
LDLC (mg/dl)	143.5±14.8	128.2±16.0	<0.001
WBC count (109/µl)	8.1±1.1	7.8±1.0	0.065
RDW (%)	13.5±0.7	13.2±0.7	0.001
Hemoglobin (g/l)	13.2±0.7	13.4±0.7	0.081
Platelet count (109/µl)	260.3±50.3	258.5±53.4	0.764
FPG (mg/dl)	106.5±18.6	86.3±10.9	<0.001
HGA1c (%)	7.3±0.8	4.9±1.0	<0.001
Creactive protein (mg/l)	2.6±2.1	2.2±1.8	0.09
Creatinine (mg/dl)	0.91±0.24	0.87±0.21	0.09
EFT (mm)	4.3±1.1	3.7±1.0	0.001

PP-4 FREQUENCY OF FRAGMENTED QRS IN SUBJECTS WITHOUT CARDIOVASCULAR DISEASE

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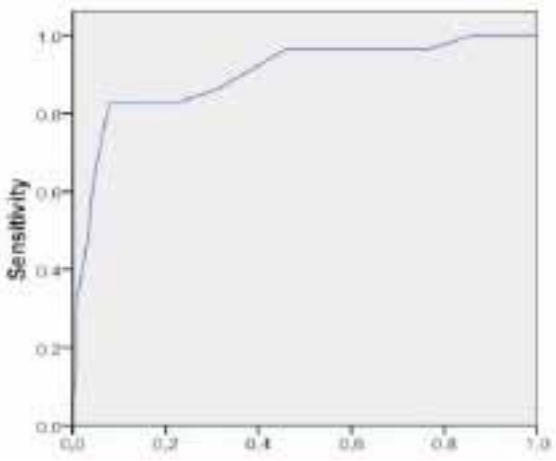
Aim: Fragmented QRS (fQRS) is a marker of depolarization abnormality due to in homogenous electrical activation of the infarcted ventricular myocardium. However, it is a nonspecific finding and can be present in persons without the cardiovascular disease. In this study, we aimed to investigate the prevalence and characteristics of the fQRS in subjects without cardiovascular disease.

Materials Methods: 417 patients were included in the study. All participants were evaluated with the history, physical examination and 12 lead electrocardiogram (ECG) along with 2-dimensional echocardiography. Criteria used in the diagnosis of fQSR include additional spikes within the QRS complex, the presence of additional R wave, notching in the S wave, the presence of R' more than two contiguous leads corresponding a major coronary artery on the resting 12-lead ECG.

Results: There was no statistically significant difference between two groups with respect to age, body mass index, smoking habits, cholesterol, LDL-C, HDL-C and triglyceride levels. Percentage of fQRS was statistically significantly higher in males compared to females (p=0.03). QRS duration and glucose level were significantly higher in patients with fQRS than those of the control subjects (p<0.001 for both comparisons) (Table 1). fQRS showed strong positive correlation with QRS duration and plasma glucose levels (r=0.437; p<0.001 and r=0.202 and p<0.001, respectively. (Figure1,2) On binary logistic regression analysis sex and glucose level were the factors found significantly associated with fQRS (OR=1.162, p=0.009 and OR=1.09, p=<0.001, respectively).

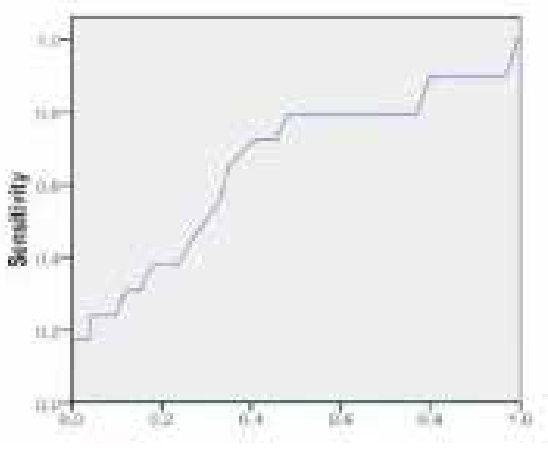
Conclusion: The fQRS is an electrocardiographic sign of delayed myocardial depolarization due to the myocardial ischemia, fibrosis, scar or inflammation. Garder et al, demonstrated that fQRS resulted from inhomogeneous and slow depolarization of the ventricles due to the myocardial scar in infarcted canine heart. Beyond its diagnostic value, it has prognostic value in patients with coronary artery disease, cardiomyopathy, Brugada syndrome, and hypertrophic cardiomyopathy. Although fQRS has been considered as a pathological finding for a long time, it is relatively common among healthy subjects as well. Tian et al., investigated the prevalence of fQRS in healthy persons. Of 1500 individuals who were screened on admission to hospital, findings showed that fQRS was present in 76 (5.1%) of subjects, 66/76 (86.8%) of which occurred in the inferior leads and 10/76 (13.2%) in anterior leads. Our numerical results range between the values of the studies mentioned above. Our study showed that 6.95% of the subjects without cardiovascular disease had fQRS. It was more common in males than females and older individuals. Subjects with fQRS had longer QRS durations and higher glucose levels compared to the subjects with normal QRS. Moreover, fQRS was positively correlated with male sex and fasting glucose levels.

FIGURE 1



ROC of QRS duration for predicting fQRS

FIGURE 2



ROC of Glucose level for predicting fQRS

Table 1

Parameters	Normal ECG (N:388)	fQRS (N:29)	p
Age, Mean±SD	39.9±10.9	42.9±8.12	0.018
Gender, n (%)			0.031
Female	197 (50.8)	9 (31)	
Male	191 (49.2)	20 (69)	
Smoking, n (%)			0.644
No	186 (47.9)	15 (51.7)	
Using	164 (42.3	10 (34.5	
Gave up	38 (9.8)	4 (13.8)	
BMI, Mean±SD	28±4.88	28.07±5.14	0.956

Parameters	Normal ECG (N:388)	fQRS (N:29)	p
QRS Type, n (%)			
Anterior		7 (24.2)	
Inferior		22 (75.8)	
QRS Duration (ms)	82.6±4.15	90.5±4.28	<0.001
TKOL (mg/dl)	184.8±30.8	182.1±26.8	0.641
TG (mg/dl)	135.8±72.8	139.2±52.4	0.544
HDL-C (mg/dl)	46.3±11.2	43.3±10.58	0.172
LDL-C (mg/dl)	121±31.02	118.2±20.2	0.486
GLU (mg/dl)	96.5±9.23	104.5±16.9	0.006
RDW (%)	13.6±1.52	13.5±0.79	0.739
HGB (g/l)	14.05±1.6	14.5±0.72	0.367
MPV (fL)	9.13±1.69	9.46±1.67	0.301
NEU (K/uL	4.24±2.17	3.89±1.59	0.552
LYM (K/uL)	2.19±0.83	1.91±0.79	0.034
NLR	2.11±1.32	2.34±1.27	0.066
Creatinin(mg/dl)	1.01±0.14	1±0.16	0.423

Baseline and Biochemical parameters of groups.

PP-5 EVALUATION OF OMENTIN LEVELS IN PATIENTS WITH UNSTABLE ANGINA PECTORIS, NON-ST ELEVATED MYOCARDIAL INFARCTION (NSTEMI) AND STEMI

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Background: Acute coronary syndrome (ACS) is an ischemic cardiac disease that could result in myocardial necrosis with the prolonged duration of ischemia.Omentin (intelectin-1) is a new biomarker that is released from adipose tissue. Omentin is associated with coronary artery disease (CAD), and it has an acute ischemic injury-reducing effect.This study aimed to assess the omentin levels in patients with unstable angina pectoris (USAP), Non-ST segment elevation myocardial infarction (NSTEMI), and ST-segment elevated myocardial infarction (STEMI).

Materials-Method: The present study included 59 patients with ACS and 22 healthy subjects prospectively.MB fraction of creatine kinase (CKMB), troponin, myoglobin, and omentin levels was measure from venous blood obtained from each patient within six h after the onset of symptoms.Plasma omentin levels were determined with an omentin enzyme-linked immunosorbent assay kit.

Results: Omentin levels were similar in ACS patients and control subjects (6.0 ± 1.7 vs. 6.3 ± 1.3; p = 0.40).There was no significant correlation among CKMB, troponin, myoglobin, and omentin levels.Moreover, omentin levels were similar in ACS subgroups (p = 0.58). There was no significant correlation between the body mass index and omentin levels (r = -0.186 p= 0.09).

Conclusion: In conclusion, our data reveal that levels of omentin were similar in patients with ACS and control subjects. There was no significant correlation among CKMB, troponin, myoglobin, and omentin levels.

Table-1. The demographic and clinical data of the study population

	Control (n=22)	Patients (n=59)	p
Age (years)	31.2±13.1	59.9±12.2	<0.001
Male/Female, n	14/8	41/18	0.60
BMI (kg/m2)	24.2±2.2	27.7±3.4	<0.001
Total cholesterol (mg/dl)	135.9±25.2	183.8±36.6	<0.001
Hemoglobin (g/dL)	13.9±0.9	12.8±1.7	0.007
Omentin (ng/ml)	6.3±1.3	6.0±1.7	0.40
Troponin (ng/ml)	-	5.7±8.0	-
CKMB (ng/ml)	-	83.0(9.0-234.0)	-
Myoglobin (ng/mL)	-	268.0(91-656)	-

BMI, Body mass index; CKMB, Creatine kinase-MB.

PP-6 TRYING TO PULL BACK IS NOT ALWAYS NECESSARY: AN INTERESTING STENT DISLODGEMENT CASE

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Introduction: Stent dislodgement in the coronary arteries is a rare but potentially fatal complication of PCI. Although it does not commonly happen in the modern PCI era;especially with the usage of new generation DES, severe coronary angulations, coronary tortuosity, diffuse long lesions, and calcified coronary arteries may lead this undesired event.When it happens, retrieval of a dislodged stent can be performed either surgically or percutaneously using different retrieval techniques. Here, we report a complicated case of heavily calcified lesion in the proximal RCA, which led coronary artery stent dislodgement during primary PCI.

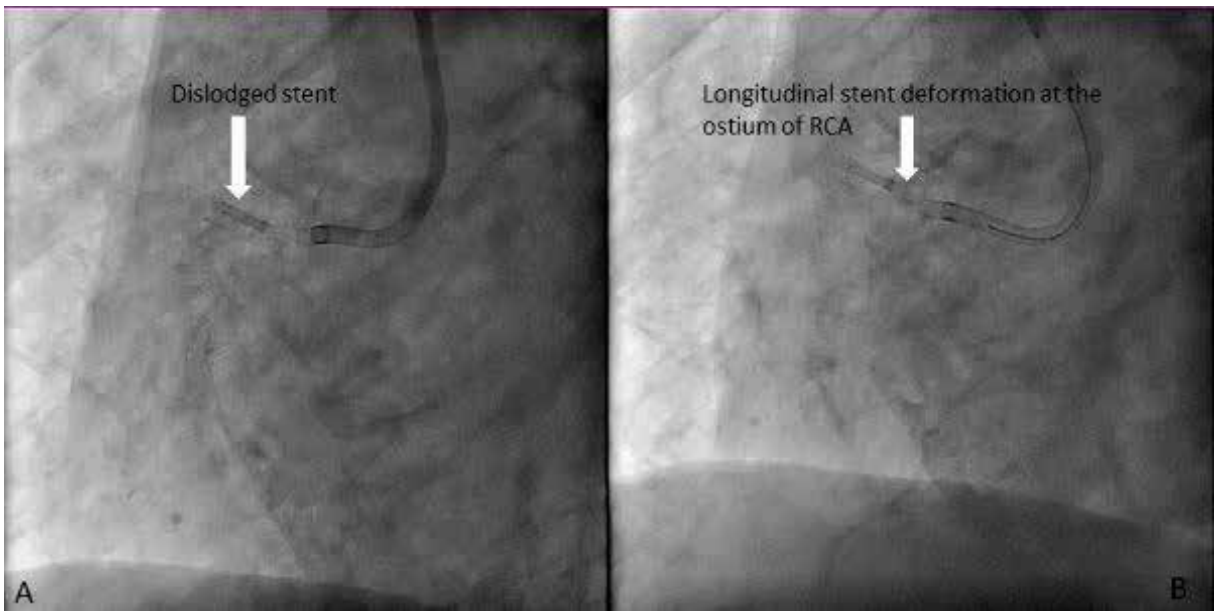
Case: 75 year old female patient was admitted to ER with a new onset typical angina. ECG revealed ST elevation in inferior derivations.We planned to perform emergency coronary angiography and primary PCI. Critical stenosis at the ostium and mid segment of RCA was detected. We deployed to the proximal and mid segment of RCA. Because of severe calcification we could not sufficiently advance the stent till the distal part of mid lesion. We had to intubate the patient suffering from severe pulmonary edema at that time. We tried to cross the proximal angulation with a support of Guideliner catheter but we could not succeed. So we tried to take the stent into the guiding catheter but it was jammed to the distal struts of the first stent. Control images showed that the last stent was dislodged from its balloon and stucked to the distal part of the proximal stent. We hardly passed the dislodged stent through its center and tried to pull it back with a small balloon. So, we advanced a balloon but unfortunately all system was ejected again. But after several attemps, we failed to take it. Because of the prolonged procedure time as a result of unsuccessful attempts, distal TIMI-3 flow achievement, complete regression of ST elevation and patient's need for surgery due to complex coronary anatomy, we concluded the procedure.12 hours after the procedure we extubated the patient successfully. One week later, CABG operation was performed. Because of severe calcification, surgeons could not retrive the stent. Patient was discharged from the hospital two weeks later uneventfully.

Discussion: Actually we could prefer to conclude the case because CABG operation might be the preferred method for complete revascularisation as a consequence of the patient's complex coronary anatomy and other comorbidities such as DM. Even though operators tend to retrive or crush the dislodged stent automatically, conservative management may be the best option in the presence of distal TIMI-3 coronary flow and the stabilized condition

Conclusion: Despite stent entrapment seems like a nightmare especially during primary PCI, operators must keep calm and should not insist on removing it from the coronary artery as it may lead to fatal complications.

Keywords: stent dislodgement, primary PCI, CABG

Stent dislodgement



PP-7 TO DETERMINE THE CO-RELATION BETWEEN 1ST SET OF TROPONIN I, AGE, DURATION OF CHEST PAIN AND LVEF IN PATIENTS PRESENTING WITH FIRST STEMI

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[3]*Jinnah University For Women, Karachi, Pakistan*

Objective: To Assess the relationship between 1st set of Trop I with age of patient, duration of chest pain and LVEF in patients presenting with first STEMI.

Basically to evaluate the contribution of increasing age with increased duration of chest pain and 1st set of trop I and decrease in LVEF in first stemi

Methodology: It was a cross sectional prospective observational study which was conducted at a tertiary care hospital, at the Cardiology department for a period of 12 months. All patients regardless of gender, aged between 30-80 years with co-morbidities including hypertension and diabetes mellitus were included presenting with acute STEMI but all patients with any previous history of cardiac surgery, any contraindication to reperfusion therapy and other co-morbidities including renal failure and sepsis etc. were excluded.

Result: A total of 150 patients were included in this study with a mean age of 61.2 ± 10.3 years out of which males were (71 %), diabetics (51%), hypertensive (59%), smokers (49%). Around 61% of the people presented to emergency > 12 hours after onset of chest pain, 13% between 6 to 12 hours and 26% in less than 6 hours after onset. For statistical analysis SPSS 21 was applied and significant relationship was observed between age and duration of symptoms, age and Troponin I and Trop I and left ventricular ejection fraction (p value <0.05).

Conclusion: It was seen in our population that people older than 50 years tend to present to emergency department late with chest pain symptoms which results in a linear rising relationship with Troponin I and with increasing Troponin I there was significant reduction seen in LVEF.The key message is to create awareness amongst people older than 50 years about the importance of chest pain and how it should be approached early in order to decrease coronary disease morbidity and improve outcomes.

Keywords: 1st set of Troponin I, Acute ST elevation Myocardial Infarction, Left Ventricular Ejection Fraction

Patient History and Demographics

Patients characteristics	MEAN ± S.D
Age (years)	59.4 ±10.7
Patients characteristics	Percentage (%)
Male	71
Age	
20-40 years	4
40-50 years	23
> 50 years	73
Co-morbidities	
Diabetics	45
Smokers	52
Hypertensives	59
Duration of chest pain	
< 6 hours	18
6-12 hours	22
>12 hours	60
Ejection Fraction	
< 30%	10
30-50%	60
> 50%	30

The table shows that the mean ages of the patients enrolled were 59.4. Majority of the patients were male (71%) as compared to females. In terms of age demarcation 4% lied in the range of 20-40 years, 23% of the population lied in the range of 40-50 years and 73% were greater than 50 years. 45% of the population were diabetics, 59% population was hypertensive where as 52% of the population smoked. The data also showed that 60% of the patients reported at emergency department when their chest pain duration exceeded 12 hours. The ejection fraction of 60% population was in the range of 30-50 according to the data.

PP-9 THE RELATIONSHIP BETWEEN INFLAMMATION MARKERS AND THE CIRCADIAN RHYTHM OF BLOOD PRESSURE IN NORMOTENSIVES

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Objective: In most healthy individuals, blood pressure shows a circadian rhythm. Being nondipper in normotensive individuals as well as hypertensives increases the cardiovascular risk. In this study, the relationship between inflammation markers and nondipper pattern in normotensive individuals was investigated.

Method: Patients with office blood pressure measurements <140/90 mmHg but suspected of hypertension in differential diagnosis and because of that followed up with ambulatory blood pressure monitoring (ABPM) at our outpatient clinic were retrospectively screened. Based on ABPM results, hypertensive patients were excluded. Remained normotensive individuals were included in the study and divided into 2 groups as dippers and non-dippers according to decline in nighttime systolic blood pressure. Monocyte / high density lipoprotein ratio (MHR), platelet/ lymphocyte ratio (PLR) and neutrophil / lymphocyte ratio (NLR) as inflammation markers were derived from biochemical laboratory tests and complete blood count findings. Then, these markers were evaluated with respect to dipping status.

Results: A total of 131 patients (mean age: 49.2 ± 15.1 years, 76% females) were included in the study. Among these, 55 (42%) patients were grouped as dippers, 76 (58%) patients were grouped as non dippers. None of MHR (p=0.929), NLR (p=0.152) and PLR (p= 0.110) significantly differed between the groups

Conclusion: MHR, PLR and NLR were not predictors of non dipping in normotensive individuals

Table-1: Inflammation markers derived from laboratory tests

	Dipper (n=55)	Non-Dipper (n=76)	p-value
MHR	1,18 (0.25-4.23)	1,21 (0.41-3.50)	0.929
PLR	0,96 (0.52-2.06)	1,09 (0.47-2.28)	0.110
NLR	1,68 (0.63-3.85)	1,89 (0.61-3.79)	0.152

Data presented as median (minimum-maximum) values MHR: Monocyte / High density lipoprotein Ratio. PLR: Platelet/ Lymphocyte Ratio. NLR: Neutrophil / Lymphocyte Ratio.

PP-10 NEUTROPHIL TO HIGH-DENSITY LIPOPROTEIN RATIO HAS A PROGNOSTIC VALUE IN HEART FAILURE PATIENTS TREATED WITH IMPLANTABLE CARDIOVERTER DEFIBRILLATOR TO PREDICT LONG TERM MORTALITY

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Introduction: Neutrophil to high-density lipoprotein ratio (NHR) is a new inflammation marker with proven prognostic values in myocardial infarction. However, a clinical study demonstrating the prognostic value of NHR in heart failure patients treated with an implantable cardioverter-defibrillator (ICD) is not yet available. In this study, it is aimed to demonstrate the relationship between NHR and mortality development in patients with heart failure with ICD.

Material-Method: 194 patients who underwent ICD implantation due to systolic heart failure between January 2015 and December 2019 have been included in this study. Information relating to the biochemical and hematological parameters and death status of the patients has been obtained through the hospital information system.

Results: The mean age of the patients was 59.84±13.26. The female gender ratio was 25.3%. Death developed in 16 patients (8%) after a median follow-up of 27 months. While basal urea, uric acid, GGT, CRP and neutrophil levels have been found to be high and hemoglobin and lymphocyte levels have been found to be low in the death developed group. While the rates of NHR have been statistically significantly higher in the group with death during follow-up (p:0.035). In ROC analyses, mortality has been predicted with 86% sensitivity and 62% specificity (p:0.035 AUC:0.74 CI:0,53-0,95) of values 0,16 of NHR and above.

Conclusion: In our study, it has been shown that NHR ratios, which is an inflammation markers, can predict mortality in patients with ICD implanted heart failure.. This is the first study demonstrating the predictive power of NHR in this patient group.

PP-11 EFFECTS OF RADIOFREQUENCY CATHETER ABLATION ON LIFE QUALITY INDEX IN PATIENTS WITH PREMATURE VENTRICULAR COMPLEX-INDUCED CARDIOMYOPATHY

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Objective: Premature ventricular complexes (PVCs) are commonly seen arrhythmia in worldwide. They may lead to left ventricular dysfunction and dilated cardiomyopathy even if not underlying structural heart disease. Radiofrequency catheter ablation (RFCA) has been reported as safe and effective treatment to decrease or eliminate PVC burden and restore left ventricular function in previous studies. Minnesota Living with Heart Failure Questionnaire (MLHFQ) is one of the most commonly used and validated questionnaire for evaluating heart failure specific quality of life. A decreased quality of life of patients were reported as the MLHFQ scores were increased in recent studies.

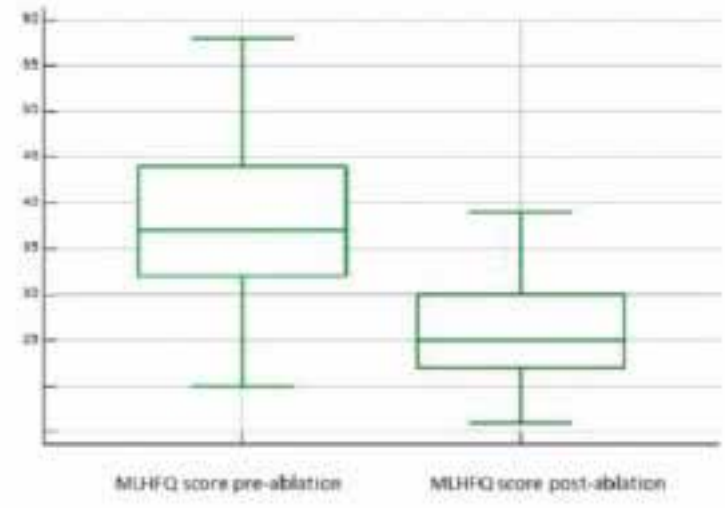
Since an effect of RFCA on quality of life of the patients detected by MLHFQ scores in PVC-induced cardiomyopathy remains unknown, we aimed to investigate this impact. Moreover, an association of N-terminal probrain natriuretic peptide (NT-proBNP) with MLHFQ scores was investigated in this setting.

Method: Sixty consecutive patients without structural heart disease, who underwent RFCA because of frequent (PVC burden > 10000 beats/day) and symptomatic PVCs refractory to medical treatment between January 2017-2019, were prospectively enrolled in this study. NT-proBNP levels were measured at admission by using an enzyme-linked immunosorbent assay method. Baseline and post-ablation functional status and capacity of the patients were determined with MLHFQ scores, New York Heart Association (NYHA) class and six minutes walk test. Study patients were followed-up for 6 months after the RFCA. Post-ablation levels of the NT-proBNP, NYHA class and MLHFQ scores were measured and change of values were compared with baseline.

Results: MLHFQ scores were found to be markedly reduced in the post-ablation period as compared to the pre-ablation (38.10 ± 9.04 vs. 25.95 ± 5.36, $p < 0.001$)(Figure). NT-proBNP levels significantly decreased in sixth month after RFCA (118.50 vs. 95 pg/mL, $p< 0.001$). NYHA classes of the study patients importantly decreased from two to one ($p < 0.001$). Furthermore, six-minute walk distances significantly increased from 259.50 ± 65.68 to 312 ± 57.31 meters ($p < 0.001$) in sixth month of ablation procedure. The MLHFQ difference scores were calculated based on both pre and post-ablation sixth month scores. MLHFQ difference scores were demonstrated to be significantly negatively correlated with the pre-ablation NT-proBNP ($r = - 0.27$, $p = 0.041$). However, there was no relation between MLHFQ difference score and rates of change of the proBNP in follow-up period ($p=0.386$).

Conclusion: We demonstrated a reduction in the MLHFQ score in post-ablation follow-up period, which infers an improvement in quality of life of the patients with cardiomyopathies in terms of both physically and emotionally. Moreover, recovery of the MLHFQ score and functional capacity after PVCs ablation may indicate a beneficial effect of RFCA to quality of life of the patients with heart failure.

Figure



Comparison of the baseline and post-ablation MLHFQ scores in patients with PVC induced cardiomyopathy.

PP-12 BRUGADA-LIKE ECG PATTERN DEVELOPING AFTER CHEST PAIN IN A PATIENT HOSPITALIZED WITH COVID-19

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İntroduction: Coronavirus disease 2019 (COVID-19), which was first reported in Wuhan, China, and spread rapidly within a few months and declared as a pandemic by WHO, is a disease caused by the Severe acute respiratory syndrome coronavirus 2 (SARS-Cov2). Although it often causes pneumonia, it can affect the heart. This viral infection can trigger or reveal certain cardiovascular pathologies such as coronary syndromes, myocarditis, arrhythmias. Here, we will present a patient who developed a Brugada-like electrocardiogram (ECG) pattern after chest pain during hospitalization with COVID-19.

Case presentation: A 40-year-old male patient admitted to our hospital with fever and cough was hospitalized with the diagnosis of Coronavirus disease (COVID-19). RBBB was observed on admission ECG (Figure 1). On the 4th day morning, the type 2 Brugada pattern was observed on the ECG (Figure 2A). At the same day, the patient had chest pain and we observed the type 1 Brugada pattern on the ECG and the fever was 37,5℃(Figure 2B). Echocardiography was normal. Serial troponins measurements were normal. The Brugada-like pattern was regressed in the following days (Figure 2C). There was no history of syncope, tachycardia, and no sudden cardiac death in his family. Since the patient was at low risk for major cardiac adverse events, he was discharged by recommending cardiology follow-up.

Discussion: Brugada syndrome is a inherite syndrome that can be associated with sudden cardiac death. ECG shows ST elevation in the right precordial leads. Fever, alcohol, metabolic disorders, myocarditis, drugs can cause the formation of a Brugada-like ECG pattern. In a recently published case, a COVİD-19 patient presenting with syncope was found to have Brugada syndrome. A transient Brugada-like ECG pattern was observed in another COVID-19 patient with normal coronary arteries who underwent angiography due to chest pain and low ejection fraction. Acute coronary syndromes, myocarditis, and arrhythmias have all been described in the setting of COVID-19 infection. Considering these effects of COVID-19, just like fever, metabolic disorders, drugs, it may cause both formation of a Brugada-like pattern on ECG and the appearance of Brugada syndrome.

Keywords: COVID-19, Arrhythmias, Brugada Syndrome

Figure 1

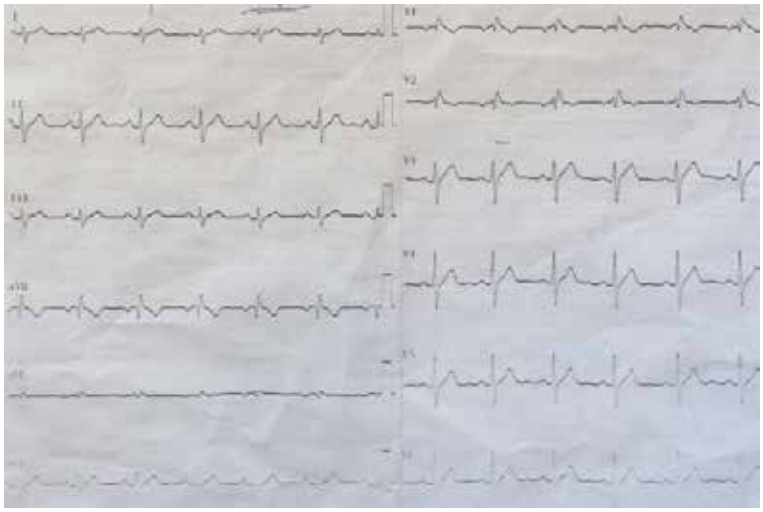

Figure 1. The patient's initial ECG in the emergency department.

Figure 2

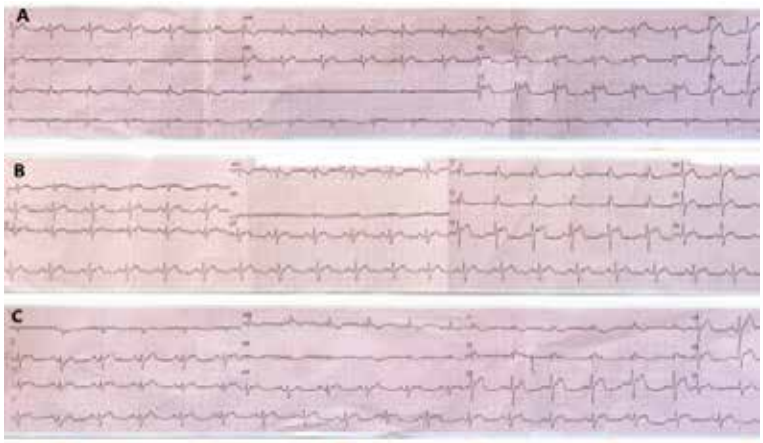

Figure 2A. The ECG showed type 2 Brugada pattern Figure 2B. The type 1 Brugada pattern in the ECG during chest pain Figure 2C.The last ECG before discharge

PP-13 CHEMOTHERAPY DELIVERING PORT-A-CATH MIGRATION INTO THE HEART: A CASE REPORT

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Introduction: Chronically diseased patients who require long-term therapy through central venous access, a totally implanted central venous port systems are used. Such beneficial devises have life-threthinig complications.

Method and Result: We report a 45-year-old Libyan female diagnosed with poorly differentiated gastric adenocarcinoma, underwent total gastrictomy with eso-jujenal anastomosis with port-a-cath placement to deliver chemotherapy. At the fourth cycle of chemotherapy, unfavourable event occurred; the catheter dislodged and migrated to the right cardiac chambers, which was successful removed by local anaesthesia with loop-snare technique via the right femoral vein and the patient preference to complement the chemotherapy cycles through peripheral line.

Conclusion: port-a-cath is beneficial devise has serious complications. Avoiding chemotherapy extravasation a bedside echocardiography should be done to evaluat the catheter. Further studies are needed in evolution of the port-a-cath by transthorasic echocardiography.

PP-14 ACUTE MYOCARDITIS: EPIDEMIOLOGICAL, CLINICAL AND IMAGING CHARACTERISTICS

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Introduction: Acute Myocarditis (AM), defined as an inflammation of the myocardium, results, most often, from common viral agents. The diagnosis is challenging for the physician because of its clinical polymorphism. Cardiac magnetic resonance imaging (MRI) may provide an alternative method for the diagnosis without the risk of biopsy. In this study, we aimed to describe epidemiological, clinical, biological and imaging outcomes of patients with AM.

Methods: This was a descriptive, retrospective study, including 28 patients hospitalized for acute myocarditis in the cardiology department of Charles Nicolle hospital between 2010 and 2020. All patients had an electrocardiogram, troponin bioassay, cardiac echography and cardiac MRI.

Results: The sex ratio M / F was 4.6. The mean age was 32.6 ± 13.5 in men and 45.8 ± 15 in women (p = 0.05). Smoking was noted in 43% of cases (n = 12). The other cardiovascular risk factors were (%, n): hypertension (7.2), diabetes (7.2) and dyslipidemia (18.5). Chest pain noted in 93% of cases (n = 26). Influenza-like illness was reported in 39% of cases. Physical examination was normal in 93% of pts (n = 26). A fever was noted in 18% of the cases (n = 5). The ECG showed (%, n): a sinus rhythm (89, 25), a right bundle branch block (25,7), an ST segment depression (14, 4), an ST segment elevation (36, 10) and negative T waves (29, 8). The chest X-ray was normal in 64% of the cases (n = 18). Cardiac enzymes were elevated in 79% of cases (n = 22) and a biological inflammatory syndrome was present in 43% of cases (n = 12). US found an overall myocardial function conserved in 89% of cases (n = 25) with disturbances in segmental kinetics in 14% of cases (n = 4). Coronary angiography was normal in 100% of the cases.

MRI confirmed the diagnosis of acute myocarditis in all patients. It showed delayed enhancement interesting the sub-epidcardium layer, respecting the endocardium and non-corresponding to a vascular distribution.

Conclusion: AM is a potentially life-threatening disease that primarily affects a young male population. Cardiac MRI has become the primary tool for non-invasive assessment of myocardial inflammation in patients with suspected myocarditis. It confirms the diagnosis and excludes coronary artery disease.

PP-15 A GIANT CARDIAC LIPOMA DIAGNOSED BY NON-INVASIVE IMAGING

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Objective: Cardiac lipomas are rare benign tumors of the heart. They are usually asymptomatic. Herein we describe a case of a cardiac lipoma.

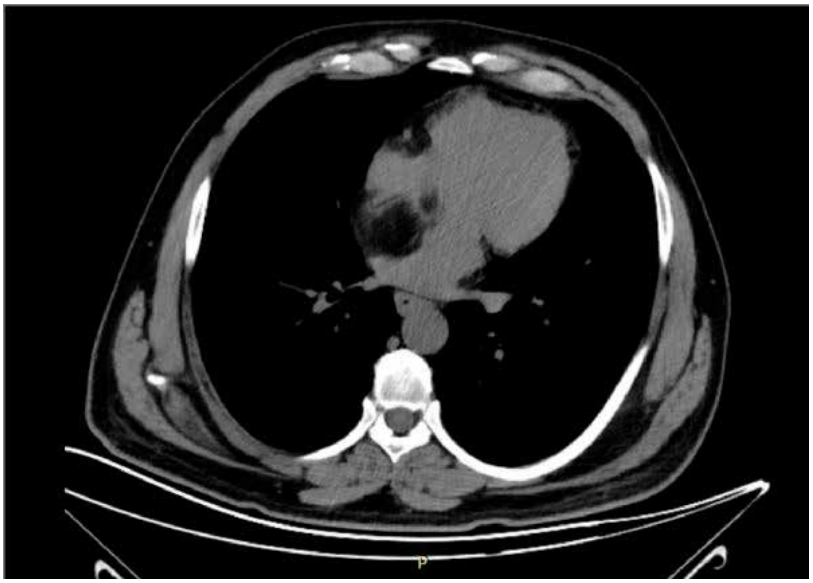
METHOD (CASE): A 54 years old man who has chronic obstuctive pulmonary disease, hypertension, and obstructive sleep apnea went for a routine check-up. Thorax CT revealed a mass in the right atrium which was concordant with lipoma. Hence, he was consulted to cardiology department. Transesophageal echocardiography demonstrated a hyperecogenic, homogeneous, immobile 35x38 mm mass with well-defined borders on the right atrial side of the interatrial septum. The mass was not related to other intracardiac structures, nor the tricuspid valve was damaged. There was not increased FDG uptake on low density lesion area on positron emission tomography. As the patient was asymptomatic medical treatment, instead of surgery was planned after heart team evaluation. Antiaggregant therapy was started.

Results: The patient continues his routine controls without symptoms. The characteristics and diameters of the mass are steady on follow-up.

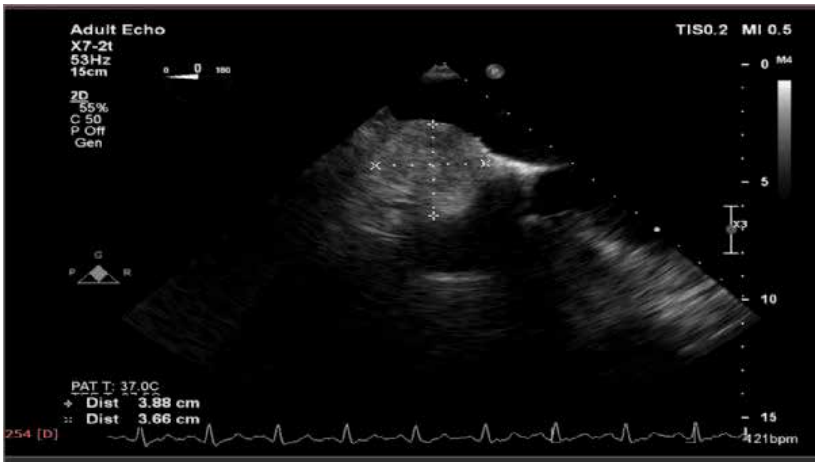
Conclusion: Cardiac lipomas are well-characterized on cardiac CT, although the diagnostic modality of choice is cardiac magnetic resonance imaging. Due to its easy availability and noninvasive nature, transthoracic echocardiography is the most common initial diagnostic tool to define the presence, extent, and location of cardiac tumours. Cardiac CT can help identify the presence of fat and so can be used to correctly diagnose cardiac lipoma. PET-CT can also help to determine nature of the mass. Surgery is the treatment in symptomatic patients, however treatment in asymptomatic patients is controversial.

Keywords: atrial mass, lipoma, non-invasive imaging

CT



transeusophagial echocardiography



PP-16 WORSENING DYSPNEA IN A 32-YEAR-OLD WOMAN: SCIMITAR SYNDROME

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Objective: Scimitar syndrome (SS) is a rare congenital anomaly of pulmonary venous return in which an anomalous right pulmonary vein drains into the inferior vena cava. Females are more frequently affected than males. Although it is usually an incidental finding on chest radiograph, adult patients with SS can present with respiratory symptoms.

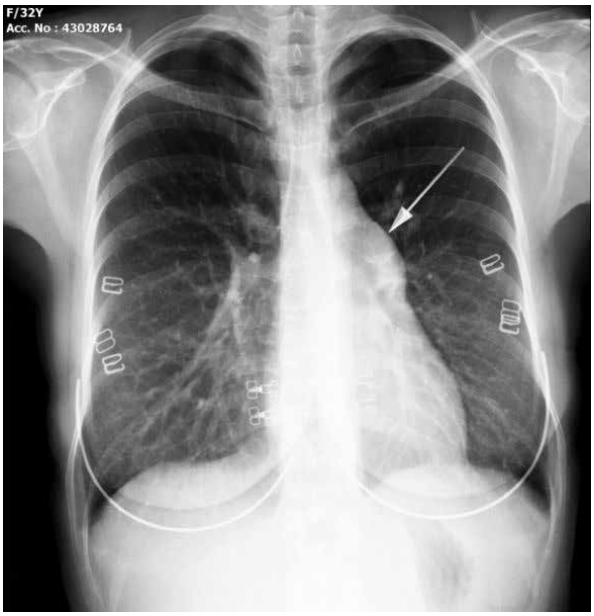
Case: A 26-year-old woman presented with dyspnea and fatigue for two weeks. Her past medical history was unremarkable and she had no constitutional symptoms. Physical examination was normal. Electrocardiography showed normal sinus rhythm. A chest radiogram revealed a prominent pulmonary conus (Figure 1). Transthoracic echocardiography revealed an estimated systolic pulmonary artery pressure of 38 mm/hg with a mild right heart chamber dilatation. On auscultation there was a loud P2 with a soft holosystolic murmur in the tricuspid area and a long diastolic murmur in the pulmonary area.

Results: Serial Computed tomography images in sagittal (Fig. 2a) and coronal planes (Fig.2b) revealed a common venous channel (with the joining of the right superior and inferior pulmonary veins), which was seen to course infero-medially to drain into the terminal part of inferior vena cava. A right heart catheterization for further assessment was recommended but she refused.

Conclusion: As in the present case, SS can be present with mild pulmonary hypertension due to a significant left-to-right shunt. The majority of the cases are associated with a partial or total hypoplastic right lung but this feauture was not present in our case. In contrast to common understanding that adult SS typically has a benign course, the patients should be regularly followed for the probability of pulmonary hypertension occurrence.

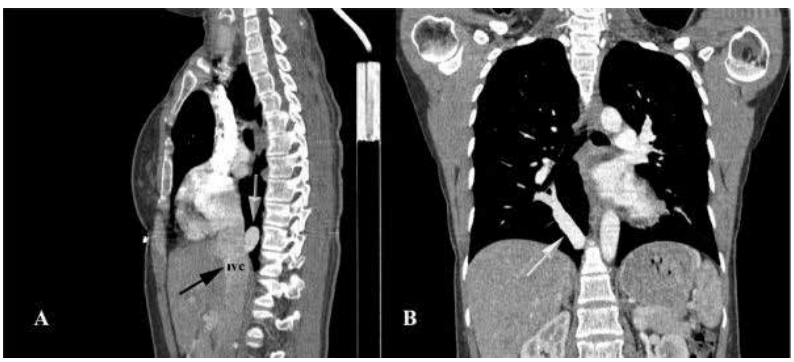
Keywords: Scimitar Syndrome, congenital cardiac defect, pulmonary hypertension

Figure 1



Chest radiography showing prominent pulmonary conus (arrow)

Figure 2A/B



A-Sagittal CT image showing the inferior vena cava (IVC, black arrow) and Scimitar vein (grey arrow) B- Coronal CT image showing the Scimitar vein (grey arrow)

PP-17 SUPERIOR VENAE CAVAE OBSTRUCTION AND INTRACARDIAC THROMBUS DUE TO PERMANENT DIALYSIS CATHETER

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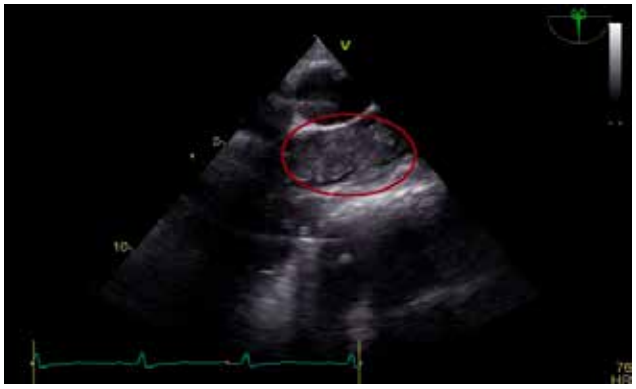
Although guidelines suggest leaving permanent dialysis catheter as a last resort nowadays it is commonly used. Even though catheter related thrombus cases are rare, they can be highly complicated. In this paper we will discuss a case which is thought firstly to be infective endocarditis however during medical process found out to be catheter thrombus.

63 years old woman, who has hypertension, diabetes mellitus, renal failure for which she is having dialysis three days a week, and does not have any known coronary artery disease. She was admitted to ER department with shortness of breath. She was having exertional dyspnea. Her electrocardiogram did not show any abnormalities. In her physical examination, S1 and S2 were normal, S3 could be heard. She had mild pre-tibial edema. Her body temperature was 36,4 °C. In her blood tests she had 8000 WBC, 9.3 mg/dl of HGB, 0,2mg/dl of hs-CRP, 7,5 mg/dl creatinine and negative for troponin levels. She was admitted to cardiology department for further evaluation because in her transthoracic echocardiography(TTE) showed right atrial mass. Although her symptoms were not in line with infective endocarditis, blood culture samples were sent. First transesophageal echocardiography(TOE) imaging showed masses of 25x16 mm in the inferior venae cavae(IVC) opening which reaches to right atrium, and 8x14 mm in the superior venae cavae(SVC) opening and 20x10mm in the right atrium appendix(RAA) which are primarily looked like thrombus and vegetations. Blood cultures were clean and patient's shortness of breath continued. Then pulmonary CT angiography was performed. It showed subacute embolism of mid and distal segments of both pulmonary arteries. Second TOE was performed. It showed masses of 20x12 mm reaching RA from IVC, 21x14 mm completely obstructing SVC, 25x37mm in RA. Pre-operative tests was performed. Intra-operative thrombi originating from permanent dialysis catheter was observed. Thrombi in the RA and RAA were removed. 19 days after the first surgical operation arteriovenous fistula operation was performed. 7 days after the second operation the patient was discharged. TTE which is performed 4 months later did not show any thrombus and the patient did not had any shortness of breath.

Although catheter thrombosis cases are rare, complications of them could be serious. In medical literature general practise is anti-coagulant therapy however there are hardly any evidence of it correcting catheter functions. Surgical treatment is avoided because of high mortality and morbidity rates. In cases like ours, which thrombus is vast and reaching to pulmonary arteries, surgical treatment is inevitable. Removal of permanent dialysis catheter and fistula opening is an logical strategy. In our case, even though SVC was completely obstructed, there was not any SVC syndrome symptoms and despite thrombus reaching to IVC and pulmonary arteries our patient's clinical condition was relatively well.

Image of thrombi in operation

Image of thrombi in TOE



PP-18 CHALLENGE CASE COMBINATION OF AORTIC STENOSIS AND HYPERTROPHIC OBSTRUCTIVE CARDIOMYOPATHY

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Primary hypertrophic cardiomyopathy (HCM) coexisting with AS is known but uncommon. There are guidelines to suggest management strategies for severe AS or obstructive HCM, but the combination of the two in one case poses special problems. We presented this case which combination of AS and subvalvular obstruction creates diagnostic and therapeutic challenges.

CASE PRESENTATION: An 92-year-old woman with presumed aortic stenosis was referred to our medical center for TAVI. She has no medical history and complained of worsening shortness of breath, particularly on exertion. Echocardiogram revealed asymmetric septal hypertrophy with systolic anterior motion of the mitral valve; peak gradient of LVOT was 90 mm Hg with Valsalva (Figure 1-A). She also had a severely calcified aortic valve with restricted leaflet opening, maximum transvalvular velocity of 4.5 m/sec, maximum instantaneous gradient of 80 mmHg across the valve, and mean gradient of 39; AVA of 0.68 cm^2; mild aortic regurgitation, mild tricuspid regurgitation, and modarete mitral regurgitation; normal pulmonary artery systolic pressure (Figure 1-B-C-D).

DISCUSSION: If a patient has only HCM, surgical septal myectomy is recommended in patients with severe dyspnea or chest pain despite optimal medical therapy. If a patient has only aortic stenosis, SAVR or TAVI is recommended. However, in our case it was critical to relieve the subvalvular obstruction because an acute decrease in the after-load could unmask or incerase dynamic subvalvular obstruction. Thus, SAVR needs to be coupled with septal myectomy to prevent intraoperative or postoperative mortality and morbidity. Cardiogenic shock and prolonged hospitalization have also been reported following TAVR when the subvalvular obstruction was not fixed. If only TAVR is performed without relieving the subaortic obstruction, that would also carry unacceptable risk. Only one case has been reported where TAVR was performed to relieve both valvular and subvalvular obstruction. An approach that could be considered in our patient is relief of the subaortic obstruction by alcohol ablation of the hypertrophied septum before fixed the aortic valvular stenosis. Benefits and risks of such a sequence are unknown at this point. The complex issues involved in this case were discussed with the patient and her family, and they opted for continued medical treatment.

Keywords: Aortic stenosis, Hypertrophic Obstructive Cardiomyopathy, TAVI

Figure 1

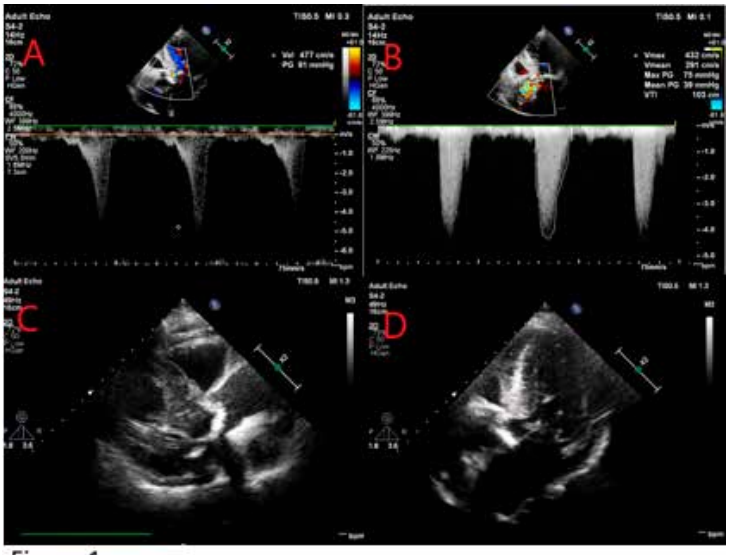

Figure 1:
A:LVOT GRADIENT B: TRANSAORTIC GRADIENT
C:PARASTERNAL LONG AXIS VIEW D:APICAL 5 CHAMBER VIEW

PP-19 THE RELATIONSHIP OF HEART FAILURE WITH GLOBAL WALL HYPOKINESIA IN INTENSIVE CARE UNIT IN CAMBODIA 2017-2018

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Background: The Ministry of Health (MOH) of Cambodia reported an increasing number of inpatient cases with cardiovascular diseases (CVDs) in 2018, and heart failure (52.8%) was the most common etiology of CVDs. HF may be associated with a wide spectrum of LV functional abnormalities, which may range from patients with normal LV size and preserved ejection fraction (EF) to those with severe dilatation and/or markedly reduced EF.

Methods: A retrospective study was conducted in patients aged >= 18 years who were diagnosed with HF and admitted to the Intensive Care Unit of Preah Ket Mealea Hospital in Phnom Penh from 1st January 2017 to 31st December 2018. Out of 140 cases, 20 were excluded because they did not meet the inclusion criteria. Study variables were categorized as subgroups of HF as per AHA/ACC guidelines. The clinical diagnosis of HF subtypes and two-dimensional echocardiography were analyzed.

Results: HFrEF was present in 15%, HFpEF borderline in 13.3%, HFpEF in 71.7% of selected 120 patients with HF. Left ventricular regional wall motion (LVWM) among subtypes of HF shows in Figure 1. Global wall hypokinesia (19.2%) was the most common. Global wall hypokinesia was more prevalent in HFrEF vs HFpEF borderline vs HFpEF (10.8% vs 5.8% vs 2.5%, P <0.001). The RR of HFrEF or HFpEF borderline and global wall hypokinesia was 2.44 (95% CI, 0.90-6.62).

Conclusions: Most of patients with HFrEF had global wall hypokinesia more than seen in HFpEF borderline or HFpEF. Global wall hypokinesia is significantly associated with HFrEF or HFpEF borderline.

Proportion of Patients with Heart Failure subtypes and Left Ventricular Wall Motion by Echocardiogram

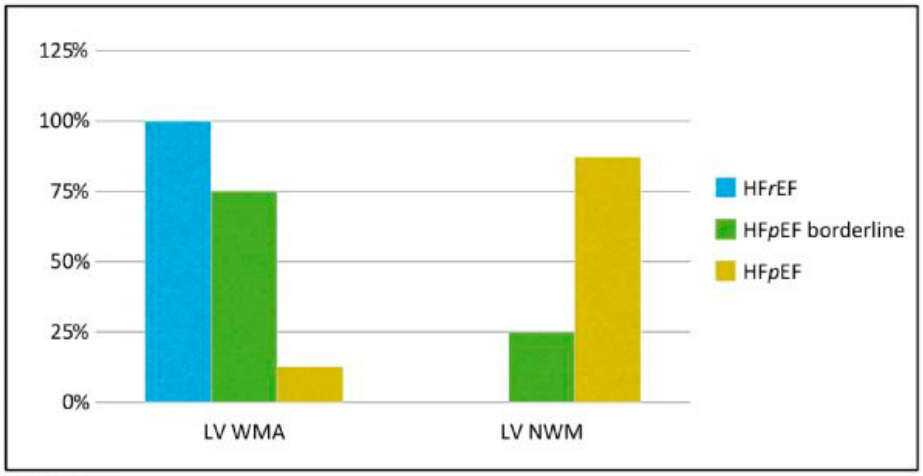

FIGURE 1. Proportion of Patients with Heart Failure subtypes and Left Ventricular Wall Motion by Echocardiogram. HFrEF, heart failure with reduced ejection fraction; HFpEF, heart failure with preserved ejection fraction; LV, left ventricular; WMA, wall motion abnormalities; NWM, normal wall motion.

Left Ventricular Wall Motion Abnormalities (LV WMA) were more frequent in HFrEF and then in HFpEF borderline.

PP-20 ASSOCIATION OF LEFT ATRIAL VOLUME INDEX WITH N-TERMINAL PRO-B-TYPE NATRIURETIC PEPTIDE LEVEL IN HEART FAILURE PATIENTS WITH PRESERVED EJECTION FRACTION

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[3]*United hospital Limited, Gulshan,Dhaka, Bangladesh*

Background: Heart failure is a major public health issue with a current prevalence of over 23 million worldwide. Epidemiologic studies suggest that nearly one-half of patients with heart failure have a normal ejection fraction that is now termed HFpEF. Most pathophysiologic abnormalities in patients with HFpEF are related to diastolic function. LA volume has been termed "Glycosylated hemoglobin of Diastolic dysfunction". Natriuretitic peptides are widely accepted biomarker in HFrEF patients. Now a days, it is also considered for HFpEF patients for diagnosis & prognosis purpose.

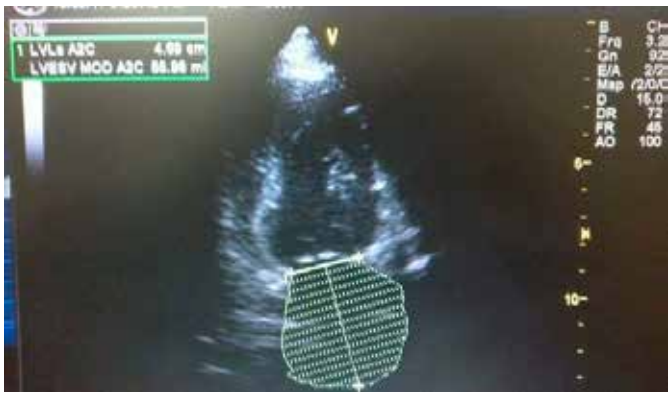
Objectives: To find out the association of Left atrial Volume index (LAVI) with N-terminal Pro B-type Natriuretic Peptide level in HFpEF patients.

Methods: This Cross Sectional Analytical Study was conducted in the department of Cardiology, Mymensingh Medical college Hospital, Mymensingh from October 2016 to September 2017. Total 120 HFpEF patients were included after considering inclusion and exclusion criteria. Sample population were divided into two groups, Group –I: HFpEF patients with LAVI <=34ml/m2 (n=77); Group –II: HFpEF patients with LAVI >34ml/m2 (n=43).

Results: In this study mean NT-pro BNP value of group-I and group-II were 284.45(±24) pg/ml and 1673.99 (±119.90) pg/ml respectively. It was statistically significant (p value < 0.05). Among the Demographic & clinical parameters Age, BMI, Hypertension, Diabetes mellitus, NYHA class were found statistically significant. Among the echocardiographic parameters, LV hypertrophy, Mitral inflow E/A ratio, TDI derived mitral annular e' septal velocity, E/ e' (septal) ratio were statistically significant. Statistically significant moderately positive correlation was observed between NT-proBNP level and LAVI value, correlation coefficient (r = 0.553, p=0.001).

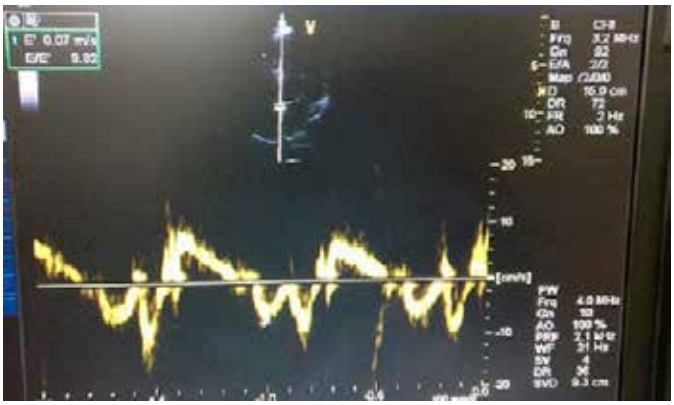
Conclusion: Elevated LAVI is associated with elevated NT-proBNP level in HFpEF patients & LAVI can be used as a marker of HFpEF.

La Volume 2 chamber view



La volume measurement in 2 chamber view

Tissue doppler imaging



Tissue Doppler E/e'

NT-Pro BNP level of the study population (n=120)

Parameter	Group I (n=77) Mean ± SEM	Group II (n=43) Mean ± SEM	P value
NT pro BNP level (pg/ml)	284.44±24	1673.99±119.90	0.001**

mean NT pro BNP level among the two groups Group –I: HFpEF patients with LAVI <=34ml/m2 (n=77); Group –II: HFpEF patients with LAVI >34ml/m2 (n=43).