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Comparison of the TIMI Frame Count in Dipper and Non-Dipper Hypertensive Patients with Normal Coronary Arteries

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Aim and Introduction: TIMI frame count was first described by Gibson et al., in order to generate a standardized method to measure the coronary blood flow. Substantial number of studies demonstrated that TIMI frame count is associated with endothelial dysfunction and coronary slow flow. Arterial blood pressure (BP) normally shows physiological diurnal fluctuations. Normally more than 10 % decrease is expected in nocturnal blood pressure. If the decline is > 10 % it is called dipper and if it's < 10 % it's called as non-dipper hypertension. The aim of this study was to evaluate the differences in TIMI frame counts between patients with non-dipper and dipper hypertension, which have normal coronary angiograms.
Methods: Thirty dipper and thirty non-dipper hypertension patients with angiographically documented normal coronary arteries were recruited for this study. Sociodemographic and clinical data were collected in addition to the body mass index. TIMI frame counts were calculated by the Gibson et al. method. A series of independent-t tests and chi-square were conducted in order to analyse group differences.
Results: Accordingly, there were no differences between the groups in terms of gender, age, smoking and alcohol consumption. TIMI frame counts of the three coronary arteries and the average TIMI frame counts were found significantly lower in the dipper hypertension group as compared to non-dipper group (See table 1). BMI of the non-dipper hypertension patient group (25.47±2.92) was significantly (p=0.027) higher than the dipper hypertension group (23.79±2.81). Lastly, non-dipper hypertension group exerted significantly higher heart rate (72.70±4.86; p=0.001) as opposed to the dipper hypertension group (66.57±4.92).
Conclusıons: To the best of our knowledge, this is the first study comparing the differences in TIMI frame counts between dipper and non-dipper hypertension patients with normal coronary angiograms. The main finding of this study is that, the average TIMI frame count and TIMI frame counts of the three coronary arteries is higher in the group with non-dipper hypertension compared to the group with dipper hypertension. Considering the well-replicated findings on the endotelial dysfunction and coronary slow flow presented in non-dipper hypertensive patients, utilizing TIMI frame counts in the clinical practice could be an efficient, objective and repeatable method to indirectly evaluate the microvascular dysfunction in these patients.

TIMI frame counts for each of the theree coronary arteries and mean TIMI frame count

	Dipper Group	Non-Dipper Group	p
RCA TIMI frame count	16.83±3.70	21.63±3.44	<0.001
Cx TIMI frame count	21.28±3.52	25.65±3.61	<0.001
LAD TIMI frame count	34.20±2.80	37.05±3.30	0.001
LAD Adjusted TIMI frame count	20.05±1.63	21.74±1.95	0.001
Mean TIMI frame count	19.31±2.31	22.94±2.61	<0.001
RCA: Right coronary artery, Cx: Circumflex artery, LAD: Left anterior descending artery			

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The Impact of Non-Cardiac Surgery on Electrocardiograph Changes, Troponin Levels in patients with Intermediate and High Risk According to Framingham General Cardiovascular Disease Risk Score

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Introductıon: Perioperative myocardial infarction (MI) is associated with high mortality rates in patients undergoing non cardiac surgery. It is difficult to diagnose perioperative MI because it often can not be described due to typical analgesics. Therefore, the diagnosis of perioperative MI can be detected by changes in ECG and troponin.
Materıal-Method: One hundred and one patients (39 female; mean age 72±11 years) whose Framingham General Cardiovascular Disease Risk Score between 10% and 47% were included. ECG records and troponin measurements were performed in preoperative assessment and repeated at the second postoperative day. Troponin levels above 0,04 ng/mL were considered to be significant.
Results: Postoperative ECG changes were detected in 39 patients and also significantly elevated troponin levels were measured in 19 patients. Both ischemic ECG changes (>0.5 mm ST depression or negative T wave) and significantly elevated troponin (>0.04 ng/dl) levels were detected together in 6 patients. There was no

postoperative typical angina. The most common postoperative ECG changes were ST depression (11 patients). Then, atrial extra systole (7 patients), sinus tachycardia (6 patients), negative T wave (6 patients), ventricular extra systole (4 patients), new-onset atrial fibrillation (2 patients) and left bundle branch block (1 patient) and right bundle branch block (1 patient), supraventricular tachycardia (1 patient) were detected respectively.
Conclusion: Patients with intermediate to high risk groups according to Framingham General Cardiovascular Disease Risc Score have frequently ischemic changes during postoperative period of non cardiac surgery. This condition may be associated with perioperative cardiac morbidity and mortality.
Keywords: non cardiac surgery, electrocardiogram, troponin, framingham risc score.

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The Effect of On-pump Coronary Artery By-pass Surgery on Aortic Functions

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Objectives: Coronary artery disease is one of the states which compromise aortic elastic properties. Aortic distensibility is the measurement of aortic elasticity and when the aorta loses its elasticity, aortic expandibility decreases and aortic function is compromised. Aortic stiffness is an independent predictor of cardiovascular risk and mortality. In extend involvement of coronaries, coronary artery by-pass surgery (CABG) is the main choice of treatment. We aimed to investigate the effect of on-pump surgery on aortic functions.
Methods: Thirty two (mean age 61,6±9,4 years) consecutive patients with coronary artery disease who underwent on-pump CABG by the same surgeon team were studied. The severity of the disease was evaluated by the Gensini score index. Aortic function indices such as aortic cross-sectional compliance, aortic distensibility and aortic stiffness index were calculated with the use of M-mode echocardiography in preoperative period and at third month postoperatively.
Results: Our study revealed a trend to improvement in aortic functions at post-op three months in patients with severe and extend coronary artery disease with high Gensini score (mean: 98,3 ± 38,1). Exhibiting an increase in aortic cross-sectional compliance from 2,62±1,5 to 3,52±1,6 cm2/mmHg (p=0,20), aortic distensibility from 3,5±2,3 to 4,6± 2,5 cm2/dyne (p=0,29) and a decrease in aortic stiffness index from 3,2±0,7 to 2,9±0,6 (p=0,19). But improvement in aortic functions was not statistically significant.
Conclusıons: To the best our knowledge, this is the first study investigating the effect of CABG on aortic functions with multi-vessel coronary artery disease. Our study showed that revascularization via on-pump CABG surgery with aortic cross-clamp doesn't deteriorate aortic functions.

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In Coronary Artery Disease Comparison of Turkey and Europe According to Kyrgyzstan and Euroaspire III Results

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Objective: For the purpose of determining the risk factors for coronary artery disease, the living style and medication usage, and complying with the newest guidelines, and to evaluate the changes seen by the passing time Turkey and Europe have been compared in view of the results of EUROASPIRE III and a study from one of the Asian countries, namely Kyrgyzstan.
Design: Longitudinal observational study of two population-based cohorts. Setting 1067 patients with coronary artery disease diagnosis were retrospectively studied. During studying these patients, they were interviewed and examined at least a year after the initial coronary event and/or intervention. Participants The EUROASPIRE III survey was carried out in 2006-2007 in 76 centres from selected geographical areas in 22 countries in Europe and 20 centers in Kyrgyzstan. Measurements Although there was not a big difference for the classical risk factors between Turkey's results and EUROASPIRE III results, in Kyrgyzstan.
Results: The gender distribution of the 1067 patients in the study was recorded as 658 female (61.7%) and 409 male (38.3%), and the average age was 68.3±13.7. The number of patients seen after the coronary event in Kyrgyzstan was 524 (49.1%). Results smoking (75%), hypertension (84%), dyslipidemia (86.5%), diabetes (74.4%) were much higher compared to the other countries. The biggest difference between Kyrgyzstan and the other countries in EUROASPIRE III Study including Turkey was the rarity of medical treatment (78%) and interventional treatment (1.9%). Also, post coronary event smoking cessation (27.4% vs 70.8% (Europe)), physical activity (17.5 % vs 59.1% (Europe)), weight loss (37.2% vs 58.2% (Europe)) ratios were found to be much less between Kyrgyz and EUROASPIRE III studies. In Kyrgyzstan and Turkey the ratios of young patients were found to be higher comparing to the other European countries (<50y: 28.3% (K), 20% (T), and 12.7% (E) of all of the patients, respectively).
Conclusıon: When compared to the results of EUROASPIRE III study of Turkey and Europe the Kyrgyzstan results found to be behind for prevention, follow up and treatment goals set by the guidelines.

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