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Original Articles

ANALYSIS ON THE POLYMORPHISM OF ADIPONECTINE GENES (rs2241766, +45 T/G) AND THE ADIPONECTINE LEVEL IN ACEHNESE PATIENTS WITH CORRONARY SLOW FLOW ARTERIES

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Background:
Until now, the etiology and mechanism of SCF have not been fully known. But looking at it through histopathology, microvascular inflammation has been found. APN is an important modulator of inflammation that has multiple protection effects on the vascular endothelium. In SCF, there is low APN level that may contribute to the occurrence of SCF.

Aim:
To analyze on the polymorphism of APN genes and the APN level on Acehense patients with SCF.

Method:
All groups were examined on their APN levels using the ELISA, and PCR Polymorphism methods of ADIPOQ rs2241766 +45 TG were done using the TaqMan GTXpress Master Mix reagent (2x).

Results:
APN levels were lower in SCF and CAD compared to the control group, and were statistically significantly different. TIMI frames in the SCF group were higher than SCF, in which SCF was much involved in RCA while CAD were much involved in LAD. The analysis of APN polymorphism resulted in no difference in genotype and allele distribution either on +45T>G. There were significant differences in the levels of adiponectine genotype TT gene +45GT in the three groups.

Conclusion:
This study shows that the APN levels are associated with the occurrence of CAD and SCF. The genotype analysis and APN gene alleles were found to be not correlated to the occurrence of CAD and SCF, but the TT genotype at +45T>G was correlated to the APN levels.

Key word :
SCF (slow coronary flow), APN (adiponektin), CAD (coronary artery disease) rs2241766 (+45T/G)

DETERMINING FACTORS THAT ASSOCIATED WITH CORONARY LESION COMPLEXITY AND NO-FLOW PHENOMENON AMONG MYOCARDIAL INFARCTION PATIENTS

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Objective

This study aimed to assess factors that associated with coronary lesion severity and no-flow phenomenon among myocardial Infarction (MI) patients who admitted to cardiac emergency room Sanglah General Hospital.

Material and Method

Cross-sectional design, we collect demographic data (age, gender, sex, BMI, onset of symptom), risk factors (DM, HTN, smoking), laboratory (Troponin T, total cholesterol, HDL, LDL, TG, random blood glucose), infarct region, TIMI risk score, infarct related artery (IRA), door-to-balloon time, history of thrombolytic pre-PCI, TIMI flow, and myocardial blush grade (MBG) score. By using multiple logistic regression analysis, backward method, we determine the independent factors for lesion complexity and no flow phenomenon during index time procedure. All data shows in odds ratio (OR), 95% CI, and p value. P value < 0.05 was considered statistically significant.

Results

All MI subjects (n=62) who undergo PCI were collected during March-May 2018. All covariates were analyzed and we found no factors were significantly associated with coronary complexity lesion, regarding traditional risk factors such as older age (OR= 0.332, 95%CI= 0.106-1.041, p= 0.059), DM (OR= 1.406, 95%CI= 0.309-6.394, p= 0.660), higher BMI (OR= 2.153, 95%CI= 0.393-11.798, p= 0.377), and high LDL (OR= 1.101, 95%CI= 0.135-8.952, p= 0.928). We were found presence of DM (OR= 20.648, 95%CI= 1.539-276.971, p= 0.022) and no thrombolytic before procedure (OR= 0.986, 95%CI= 0.009-0.561, p= 0.012) were associated independently with low TIMI flow (score 0-1). On the other side, older age (OR= 3.364, 95%CI= 1.025-11.040, p= 0.035) was associated independently with low MBG (score 0-1) in this study.

Conclusion

No factors were found associated with coronary lesion complexity. Diabetes mellitus, no thrombolytic therapy, and older age were associated independently with no flow phenomenon during angiography.

Keywords: coronary lesion complexity, no flow phenomenon, myocardial infarction

PATIENT PROFILES AND OUTCOMES OF ENDOVASCULAR AORTIC REPAIR (TEVAR/EVAR) IN NATIONAL CARDIOVASCULAR CENTER HARAPAN KITA HOSPITAL: A SINGLE CENTER EXPERIENCE

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Background & Objectives:

The prevalence of aortic dissections and aneurysms is increasing due to increased life expectancy, development of diagnostic methods and awareness of disease. Overall global death from aortic dissections and aneurysms had increased over the last decade. Endovascular interventions recently played an important role in the management of aortic diseases. Now, the basis of management is starting to shift to less invasive modalities. This study reports our experience in National Cardiovascular Center Harapan Kita Hospital to show profiles and outcomes of endovascular aortic repair interventions.

Methods:

Patients who undergone TEVAR or EVAR in NCVCHK from 2017 were included in this study. Characteristics, outcome, and follow up of patients were documented from the medical record. Outcomes included are in hospital death, 30 days readmission, length of stay, and complications of the intervention.

Results:

94 subjects were included in this study, mostly male (84 %). 65 subjects undergone TEVAR and the rest received EVAR intervention. The median of age is 61 (39-80) years. 54 % of subjects were overweight-obese, 86 subjects (91.5 %) had hypertension, and 48 subjects (51.1%) were smokers. 30 patients (31.9%) had both dissections and aneurysms. 23 patients (24.5 %) had dissection only and 41 patients (43.6 %) had aneurysm only. 82.7 % of the dissections were DeBakey III and 60 % of the aneurysms were thoracic. 36.7 % subjects who performed coronary CT had CAD. The median of LoS was eight days, with more than 2/3 of patients hospitalized below 10 days. 30 days-rehospitalization rate was 13.8%. In hospital mortality rate was just 5.3 %. With other

complications such as reinterventions, malperfusions, endoleaks, retrograde dissections, bleedings were below 6 % respectively. Most subjects didn't experience any major complaints during 30 days follow up.

Conclusion:

Endovascular aortic repair is an effective modality for management of aortic aneurysms and dissections (especially DeBakey III) with promising outcomes and low rate of complications. Further study is recommended for broader use and development of this modality.

Keywords:

EVAR, TEVAR, Endovascular, Aorta, Outcome, National Cardiovascular Center Harapan Kita

BALLOON PULMONARY VALVULOPLASTY IN NEONATES WITH CRITICAL PULMONARY STENOSIS : JUGULAR OR FEMORAL

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Objective : Critical pulmonary stenosis (PS) is one of the life threatening congenital heart disease present during neonatal period with cyanosis. During earlier period, surgical pulmonary valvotomy was the procedure of choice for critical PS, however in the past decade balloon pulmonary valvuloplasty (BPV) has become the standard treatment. Although the procedure is usually simple, crossing the pulmonary valve from femoral vein can be difficult especially when severe tricuspid regurgitation and right atrium dilatation were present. In such patients, the manuever can be simplified by using a right internal jugular vein approach. Reluctance of operators in using this approach maybe related to unfamiliarity with the technique, potential complications, paucity of reports describing results of transjugular approach, and reluctance to introduce large balloon catheters and sheaths into the right internal jugular vein. Therefore, we compared transjugular with femoral approach in terms of procedure time and complications.

Material and method : This was cohort retrospective study. Subjects were neonates with critical PS undergoing BPV in National Cardiovascular Center Harapan Kita from 2013-2018.

Results: From 15 neonates underwent BPV, 8 were done using transjugular apporach and 7 using femoral approach. Mean age and weight in both groups was similar. In all 8 patients using transjugular approach, crossing the pulmonary valve was consistently quick and easy. The procedure time was significantly shorter using transjugular approach (65 ± 8 min vs $108\pm17,8$ min, $p<0,05$) with no complications regarding the vascular access. Moreover, the BPV procedure itself demonstrated comparable results in both groups.

Conclusion: BPV using transjugular approach is safe and effective to relieve critical PS in neonates compared to transfemoral approach.

Presentation : oral

CORRELATION BETWEEN HIGH CIRCULATING GALECTIN-3 SERUM LEVEL AND MYOCARDIAL BLUSH GRADE (MBG) ASSESSED BY QUANTITATIVE BLUSH EVALUATOR (QuBE) AFTER ANGIOGRAPHIC PROCEDURE

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Objectives

This study aimed to investigate correlation between Galectin-3, as a novel biomarker for cardiac remodelling process during myocardial infarction, with Myocardial Blush Grade (MBG) score as one of the myocardial perfusion predictor.

Material and Method

We designed cross sectional study among acute myocardial infarction (MI), including STEMI and NSTEMI, who undergo percutaneous coronary intervention (PCI) within index time 72 hours from admission. Galectin-3 serum was measured by ELISA, then MBG score was assessed by QuBE software during angiography before stenting or angioplasty. Spearman correlation was used on bivariate analysis and p value < 0.05 considered statistically significant. Analysis was performed by Statistical Package for Social Sciences (SPSS) 23.0 version.

Results

All subjects (n=62) were collected during March-May 2018. Subjects is male preponderance (89%), dominantly admitted within 12 hours (90%), undergo a primary PCI (87%), have coronary lesion complexity 3 vessel disease (33%), mostly LAD as an infarct-related artery (71%), mean Galectin-3 level 12.5 ng/ml, and mean MBG score by QuBE 6.0. Spearman analysis yield strong, two-tailed correlation, between Galectin-3 level and MBG by QuBE (r=-0.674; p= 0.000) before angioplasty procedure among MI patients in this study. Galectin-3 and MBG score by QuBE were important and significant predictor of cardiac remodelling process during infarction stage. Provided by its clinical benefit and practically in use, we recommend to apply those parameters in determining predictor of MI's outcome.

Conclusion

High Galectin-3 level was correlated with high MBG score by QuBE among MI patients in this study.

Keywords: Galectin-3, MBG score, QuBE, Myocardial Infarction

IATROGENIC PERFORATED BALLOON TECHNIQUE IN PRIMARY PCI: EXPERIENCES FROM RD KANDOU HOSPITAL

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Objective

Iatrogenic perforated balloon (IPB) technique is a novel and simple technique to measure length of lesion in no-reflow phenomenon during primary percutaneous coronary intervention (PCI). The aim of this study is to share our experiences using IPB procedure during primary PCI in RD Kandou Hospital.

Method

Subjects comprised of 25 eligible ST-segment elevation myocardial infarction (STEMI) patients with total occlusion at the infarct-related artery (IRA), out of total 105 patients undergoing primary PCI from January until December 2017 at RD Kandou Hospital. Then the sample data was divided into 7 patients in IPB technique group and 18 patients in non-IPB technique group. The IPB group is defined by using by-needle perforated balloon and dilated at the distal of the IRA. After the balloon was pulled out to the osteal, the contrast was injected concomitantly.

Results

From the statistical analysis, IPB group had no significant difference in baseline characteristics with non-IPB group. IPB group and non-IPB group had similar duration of procedure (53.57±21.70 vs. 50.83±21.57, p 0.779), total length of stay (7.43±1.62 vs. 6.89±2.06, p 0.292), and post PCI TIMI Flow (p 1.000), respectively, without any complication found in both groups. However, the IPB group had significantly lower amount use of contrast compared to the non-IPB group (110.00±26.46 vs. 159.44±49.05, p 0.005).

Conclusion

Iatrogenic perforated balloon technique might be a safe and simple choice to use in primary PCI. It might lower the risk of contrast-induced kidney injury.

Table 1: Patient Baseline Characteristics

Variable	Iatrogenic Perforated Balloon Group N = 7	Non Iatrogenic Perforated Balloon Group N = 18	p
Age (years)	55.57±10.72	53.39±12.02	0.606
Male (n (%))	7 (100%)	14 (66.7%)	0.294
Body Mass Index (kg/m^2)	25.95±3.32	25.51±4.39	0.813
Risk Factor			
Current Smoker (n (%))	4 (57.1%)	8 (44.4%)	0.673
Hypertension (n (%))	2 (28.5%)	13 (72.2%)	0.075
Diabetes (n (%))	1 (14.3%)	2 (11.1%)	1.000
Dyslipidemia (n (%))	3 (42.9%)	3 (16.7%)	0.298
Family History (n (%))	0 (0%)	1 (14.3%)	1.000
History of Stroke (n (%))	0 (0%)	2 (11.1%)	1.000
Chronic Kidney Disease (n (%))	0 (0%)	1 (5.5%)	1.000
History of Past PCI (n (%))	0 (0%)	1 (5.5%)	1.000
Anterior STEMI (n (%))	4 (57.1%)	8 (44.4%)	0.673
Killip Class			
Killip 1 (n (%))	5 (71.4%)	16 (88.9%)	0.998
Killip 2 (n (%))	1 (14.2%)	1 (5.5%)	
Killip 3 (n (%))	0 (0%)	0 (0%)	
Killip 4 (n (%))	1 (14.2%)	1 (5.5%)	
Onset (hours)	8.43±5.53	4.33±2.40	0.101
TIMI Score	4.00±3.05	3.94±2.41	0.778
CRUSADE Score	25.00±12.26	29.39±14.15	0.479
Mean Arterial Pressure (mmHg)	93.98±17.04	99.74±21.24	0.529
Heart Rate (bpm)	88.86±9.99	78.22±14.83	0.059
Creatinine (mg/dL)	1.19±0.37	1.18±0.46	0.968

Table 2: Intra-Procedural Characteristics

Variable	Iatrogenic Perforated Balloon Group N = 7	Non Iatrogenic Perforated Balloon Group N = 18	p
Duration (minutes)	53.57±21.70	50.83±21.57	0.779
Amount of contrast (ml)	110.00±26.46	159.44±49.05	0.005
Total length of stay (days)	7.43±1.62	6.89±2.06	0.292
Target vessel			
LM	0 (0%)	1 (5.56%)	
LAD	4 (57.14%)	9 (50%)	1.000
LCx	0 (0%)	1 (5.56%)	
RCA	3 (42.86%)	7 (38.89%)	
Vessel Injury Complication (n (%))	0 (100%)	0 (100%)	
Post PCI TIMI Flow			
TIMI Flow 2	1 (14.29%)	3 (16.67%)	1.000
TIMI Flow 3	6 (85.71%)	15 (83.33%)	

THE ASSOCIATION OF NEUTROPHIL TO LYMPHOCYTE RATIO WITH SYNTAX SCORE 1 IN ELECTIVE PCI PATIENTS

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Objective:

Atherosclerosis is the major cause of cardiovascular disease that still accounts for most of the mortality worldwide. Recent studies on atherosclerotic plaques show that atherosclerosis is a complex pathophysiology wherein the inflammatory process plays an important role in the onset and progression of the disease. On the other hand, The NLR is a combination of two independent markers of inflammation: neutrophils as a marker of the ongoing nonspecific inflammation and lymphocytes as a marker of the regulatory pathway. A higher NLR indicates a higher level of inflammation. This study aimed to investigate the association between neutrophil to lymphocyte ratio (NLR) with syntax score 1 in elective PCI patients.

Material and Method:

A total of 160 patients were included in the study from March to September 2018, 137 stable angina pectoris (SAP) patients and 23 unstable angina pectoris (UAP) patients. Based on the results of coronary angiography, all patients were divided into two groups according to the Syntax scores 1: the low score group (N = 78) and the intermediate-high-score group (N = 82). The NLR was computed from the ratio of neutrophils and lymphocytes from the complete blood count. The association between the NLR and syntax score was assessed using correlation analysis.

Results:

Table 1. Baseline characteristic of the two Syntax score groups

Variable	Low -syntax score (N= 78)	Intermediate-high syntax score (N= 82)	P value
Age (years)	59 ± 9.1	59 ± 9	0.663
Male [N, (%)]	57(50)	55(49)	0.512
Log Platelet Count $(x10^9/L)$	78 ± 0.19	82 ± 0.11	0.625
Cr(mg/dL)	1.2 ± 0.29	1.24 ± 0.28	0.385
Diagnosis, SAP [N,(%)]	71(51.8)	66(48.2)	0.094
UAP[N,(%)]	7(30.4)	16(69.6)	0.094
NLR	2.2 ± 0.89	2.8 ± 0.94	<0.001*

Table 2. Gamma correlation

		Syntax Score		r	P value
		Low <23	Intermediate-high $\geq$ 23		
NLR	<2,4	58 (72,5)	22 (27,5)	0,776	<0,001
	>2,4	20 (25)	60 (75)		
Total		78 (48,8)	82 (51,3)		

The NLR was higher in the intermediate-high score group than in the low-score group (P < 0.05). Correlation analysis showed that the NLR was significantly correlated with the Syntax score 1. A cutoff NLR of 2.4 predicted intermediate-high Syntax scores 1 with a sensitivity and specificity of 68 and 74%, respectively.

Conclusion:

The study suggests that the NLR is an independent predictor of that may be useful for predicting the severity of coronary artery stenosis during elective PCI.

Key words: Neurtophil-to-lymphocyte ratio; Syntax score; Elective PCI; Coronary artery disease

ASSOCIATION OF TRADITIONAL RISK FACTORS WITH THE SEVERITY OF CORONARY ARTERY LESION IN STABLE CORONARY ARTERY DISEASE PATIENTS

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Objective: The aims of this study is to find the association of traditional risk factors with the severity of coronary artery lesion in stable coronary artery disease patients.

Methods: This case control study using secondary data from medical record patients who had stable coronary artery disease recorded in the Cath-Lab Wahidin Sudirohusodo Hospital (2017-2018). These patients were divided into severe coronary artery lesion group (Gensini Score ≥ 25) and mild coronary artery lesion group (Gensini score < 25). Severity of coronary artery lesion was evaluated with Gensini Score System. Traditional vascular risk factor of this study was hypertension, diabetes, dyslipidemia, smoking and obesity. The Data were analyzed univariate and bivariate followed by the chi-square test.

Results: The data of 104 subjects consisted of 52 patients with severe coronary artery lesion and 52 patients mild coronary artery lesion, 78,7% were male with age range 35 and 72 years old ($55,47 \pm 8,26$ years old). Hypertension, diabetes, dyslipidemia, smoking and obesity are more common in severe coronary artery lesion group than mild coronary artery lesion group. Bivariate analysis showed Diabetes is significantly associated with higher severity of coronary artery lesion in stable Coronary Artery Disease patients (OR: 6.3, 95% CI: 1,9 - 10,4, p< 0,001).

Conclusion: This study could find association between Diabetes with the severity of coronary artery lesion in patients with stable Coronary Artery Disease. Diabetes is modifiable traditional vascular risk factors which be associated with sixfold severity of coronary artery lesion.

Keywords: *traditional risk factors, severity, coronary artery lesion ,stable coronary artery disease*.