Perspectives in Cardiology: From Hypertension to Percutaneous Interventions

OP-190 [AJC » Cardiac pacing for bradyarrhythmias]

The Importance and Safety of Contrast Venography before Procedure in Patients with Permanent Pacemaker. Fatih Mehmet Ucar, *Mustafa Adem Yılmaztepe. Trakya Üniversitesi Tıp Fakültesi.*

Objective: Permanent pacemakers are devices that are used for create or organize cardiac rhythms or give shock from endocardium. Devices are usually placed in the left or right pectoral region. Leads which receive or transfer impulse from endocardium are delivered endocardium via subclavian or axillary vein. In this study, we investigate the importance and safety of contrast venography before pacemaker implantation.

Methods: In order to provide a homogeneous distribution of patient groups only intracardiac defibrillator (ICD) devices were included the study. Totally 240 ICD devices were implanted at our hospital from January 2013 to December 2015. 96 (%40) patients who were performed veography were compared with non-venography patients of 144 (%60) in terms of the development of the process success and complications.

Results: The median age was 61 ±11.2 years with %80.4 male. ICD's were single chambered. Venography group had significantly shorter scope time when compared non-venography group ($p<0.001$). Pneumothorax was lower in venography group ($p=0.04$). Pacemaker pocket hematoma was lower in venography group but it was not statistically important ($p=0.09$). The amount of the total opaque was 7.8 milliliters in 96 patients in venography group and contrast-induced nephropathy did not develop in any patients.

Conclusion: The biggest challenge during the placement of a permanent pacemaker is experienced during venous route attempt. For venous route, subclavian or axillary veins are used. Pneumothorax, hemotorax or hematoma can be seen as a result of the wrong attempt. Additionally, puncture is performed under fluoroscopy and often within this period, the operator's hand is exposed to intense radiation. However, venous anomalies, total occlusion, and an abnormal pattern of the axillary vein may cause operation failure. As a result, showing venous course with using a small amount of contrast than doing procedure eliminate most of the difficulties and it is quite safe.

Keywords: Permanent pacemakers, contrast venography, complication

Table

	Venography Group (n=96)	Non venography group (n=144)	
Male	(76) (79.1)	(117) (83.5)	0.69
Age	60 ± 10.7	61 ± 11.6	0.73
Hypertansion, n (%)	50 (52)	63 (45)	0.20
Diabetes Mellitus, n (%)	24 (25)	29 (20)	0.37
CABG, n (%)	29 (30)	35 (25)	0.44
Peripheral artery disease, n (%)	21 (38)	17 (34)	0.60
Ejection fraction, (%)	31 ± 10.1	28 ± 8.7	0.09
Body mass index, (kg/m^2)	25.6 ±1.9	26.5 ±3.0	0,76
Pneumotorax, n (%)	1 (0.1)	9 (0.6)	0.04
Pace pocket hematoma, n (%)	2 (0.2)	10 (0.7)	0.09
Total scope time (min.)	3.9 ± 0.2	4.4 ± 0.9	<0.001

OP-191 [AJC » Acute Coronary Syndromes]

Usefullness Of The CHA2DS2VASc Score To Predict Intracoronary Thrombus Burden In ST-Elevation Myocardial Infarction Patients. Özge Kurmuş[1], *Sabri Seyis[2], Salih Kılıç[3], Sezen Bağlan Uzunget[1], İbrahim Konukçu[2], Ebru Akgül Ercan[1]. [1]Department of Cardiology, Ufuk University, Ankara, Turkey; [2]Department of Cardiology, Doğuş Hospital, Mersin, Turkey; [3]Department of Cardiology, Nizip State Hospital, Gaziantep, Turkey.*

Objective: To evaluate the role of CHA2DS2VASc score in predicting the amount of intracoronary thrombus burden in ST-Elevation Myocardial Infarction (STEMI) patients.

Methods: This retrospective analysis included 164 consecutive patients admitted to our hospital with STEMI. Patients within 12 hour after the onset of chest pain were enrolled. All patients underwent primary PCI within 1 hour of hospital admission. Thrombus burden in infarct related artery was graded according to TIMI thrombus score as follows: grade 0: no thrombus, grade 1: possible thrombus, grade 2: the thrombus' greatest dimension is <1/2 vessel diameter, grade 3: greatest dimension > 1/2 to <2 vessel diameters, grade 4: greatest dimension > 2 vessel diameters, Grade 5: total vessel occlusion due to thrombus. The

Table 1
Clinical, laboratory and angiographical characteristics among high thrombus burden and low thrombus burden groups

Variables	All patients n=164	Low thrombus n=94	High thrombus n=70	p
Age (years)	61.2±11.6	57.8±10.3	65.8±11.6	<0.001
Men (%)	71.3	73.6	68.6	0.498
Diabetes mellitus (%)	47.0	27.7	72.9	<0.001
Hypertension (%)	52.8	42.6	80.0	<0.001
Smokers (%)	65.2	66.0	64.3	0.824
Hyperlipidemia (%)	42.1	38.3	47.1	0.256
Mean Ejection fraction (%)	43.5±8.7	47.5±7.3	38.0±7.5	<0.001
Mean CHA2DS2VASc score	2.8±2.1	1.47±1.1	4.41±1.7	<0.001
Anterior MI (%)	41.5	37.1	47.1	0.351
Multivessel Disease (%)	63.4	54.3	75.7	0.005
Mean Heamoglobin(g/dl)	13.0±1.3	13.1±1.6	12.9±1.6	0.390
Mean white blood cell count	10768±3040	10782±3108	10750±2967	0.945
Mean Platelet count	253124±71433	257000±70000	247000±73000	0.305
Mean total cholesterol level (mg/dl)	192.3±41.3	193.0±41	190.0±40	0.585
Mean low density lipoprotein level (mg/dl)	117.9±36.5	116.1±37	119.5±35	0.693
Mean High density lipoproteinlevel (mg/dl)	38.8±9.8	38.5±9	39.0±10	0.231
Mean triglyceride level (mg/dl)	172.0±108.9	189.6±142	148.1±110	0.48

patients were stratified into low thrombus burden (grades 1, 2 and 3) and high thrombus burden groups (grade 4 and 5) according to thrombus score. CHA2DS2VASc score was calculated according to the patient's database recorded during hospitalization.

Results: The 164 patients had a mean age of 61.2 ± 11.6 years and included 71.3% males. Sixty-eight patients (41.5%) had anterior myocardial infarction. Of the 164 patients, 94 (57%) had low thrombus burden and 70 (43%) had high thrombus burden. Patients with high thrombus were older (65.8 ±11.6 vs 57.8 ±10.3, p<0.001).

CHA2DS2VASc score was higher in patients with high thrombus burden compared to patients with low thrombus burden (4.41 ± 1.7 vs 1.47 ±1.1, p<0.001) (Table 1). CHA2DS2VASc score had a significant value in predicting thrombus burden. Logistic regression analysis revealed that one-point increment in CHA2DS2VASc score was associated with three times higher risk of having high thrombus burden (odds ratio 3.28, 95% CI: 2.57- 5.70). Mean ejection fraction was lower in patients with high thrombus burden than patients with low thrombus burden (38.0 ± 7.5 vs 47.5 ± 7.3, p<0.001). Patients with high thrombus burden had higher prevalence of multivessel disease than low thrombus burden (75.7% vs 54.3%, p<0.001).

Conclusion: Baseline thrombus predicts increased ischemic complications in STEMI patients and this study demonstrated that CHA2DS2VASc score is a simple tool to predict thrombus burden in patients with STEMI.

Keywords: STEMI, coronary thrombus, CHA2DS2VASc score

OP-192 [AJC » Acute Coronary Syndromes]

B-type Natriuretic Peptide Levels Predict New-onset Atrial Fibrillation Development in Patients with Acute ST Segment Elevation Myocardial Infarction.

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Introduction: New-onset atrial fibrillation (NOAF) is a common complication of acute ST segment elevation myocardial infarction (STEMI) and a predictor of poor prognosis after STEMI. Several clinical and laboratory parameters including B-type natriuretic peptide (BNP) have been found to be associated with NOAF in STEMI patients. The aim of this study was to evaluate whether BNP levels and/or other variables had predictive value for the development of NOAF regardless of ejection fraction (EF) in STEMI patients treated with primary percutaneous coronary intervention (pPCI).

Materials and Method: A total of 720 patients with STEMI who underwent pPCI from January 2010 to September 2016 were retrospectively enrolled in the study. NOAF was defined as the arrhythmia developing after hospital admission which included irregular RR intervals on ECG; absence of identifiable P waves, with an unidentifiable isoelectric line and atrial rhythm > 300 beats per minute. LVEF defined as postprocedural EF was assessed using modified Simpson's method.

Results: NOAF developed in 5,4% (n:39) of the study population during index hospitalization. BNP levels were significantly higher in patients with NOAF than patients without NOAF (197.0; 89.7-298.0 vs 81.0; 35.0-187.6 p<0,001). Patients with NOAF had higher age, greater male incidence, more frequent history of Diabetes mellitus, hypertension, previous medication of acetylsalicylic acid, higher heart rate, a higher Killip class on admission, lower postprocedural thrombolysis in myocardial grade, increased white blood cell count and C-Reactive protein, peak creatine kinase myocardial band and troponin level, decreased hemoglobin, glomerular filtration rate and LVEF. Due to high differences between the number of patients with NOAF and without NOAF and to eliminate the effects of the variables that were previously found to be associated with NOAF, propensity score matching was performed. Forty-one patients are selected from patients without NOAF group and matched with 39 patients of NOAF group. In matched population, we found that only BNP levels were higher in patients with NOAF than patients without NOAF (219.0; 87.9-432.0 vs 99.6; 67.0-211.4 p=0,032). In univariate regression analysis, BNP was found to be an independent predictor for NOAF development (OR: 1.004 %95 CI:1,001-1,008 p: 0,043). The cutoff value of BNP in ROC curve analysis for NOAF prediction were 262.65 with sensitivity of %48.7 and specifity of %85.7 (AUC: 0,694 %95 CI: 0,541-0,847 p: 0,032).

Discussion and Conclusion: The present study demonstrated that high BNP levels were significantly related to NOAF development in STEMI patients and were independent predictor of NOAF development.

Keywords: STEMI, Atrial Fibrillation, BNP

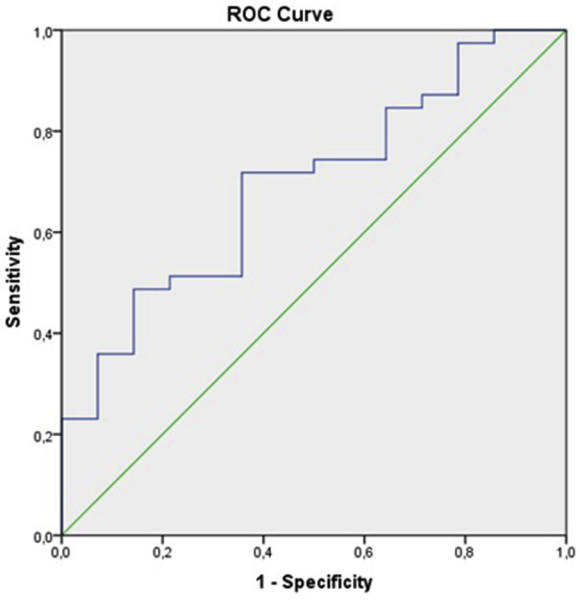

Figure. ROC graphics to detect best cutoff value of BNP level for NOAF prediction. The cutoff value of BNP level for NOAF prediction were 262,65 with sensitivity of %48,7 and specificity of %85,7 (AUC:0,694 %95 CI:0,541-0,847 p:0,032).

Table

	Patients without NOAF(N:41)	Patients with NOAF(N:39)	Patients with NOAF(N:39)
Age (years)	58,2 ±15,0	62,3 ±14,0	,310
Male Gender n (%)	36,0 (85,7)	26,0 (66,7)	,324
Diabetes Mellitus n (%)	12 28,60	17,0 (43,6)	,153
Hypertension n (%)	24,0 (57)	30,0 (76,9)	,441
Dyslipidaemia n (%)	15,0 (35,7)	14,0 (35,9)	,841
Family history of CAD n (%)	6,0 (14,3)	6,0 (15,4)	,922
History of Smoking n (%)	24,0 (57)	13,0 (33,3)	,111
Previous medication, ASA n (%)	1,0 (2.4)	2,0 (5,1)	,388
Previous medication, Clopidogrel n (%)	0,0 (0,00)	0,0 (0,00)	
Previous medication, β-Blocker n (%)	6,0 (14,3)	7,0 (17,9)	,110
Previous medication, ACEİ or ARB n (%)	12,0 28,60	12,0 30,80	,878
Previous medication, Statin n (%)	3,0 (7,1)	4,0 (10,3)	,732
SBP (mmHg)	133 ±51	129 ±40	,780
Heart rate (bpm)	74 ±22,0	84,0 ±20,0	,121
Killip class > 1 on admission n (%)	9 (21,4)	16,0 (41,0)	,251
WBC Count (10^3/µl)	14,1 ±5,2	14,3 ±5,3	,934

(*continued*)