

## A study of Platelet indices in acute myocardial infarction: An observational study



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**Background:** Platelets play an important role in the pathophysiology of coronary artery disease. Naive platelets are larger in size and have more reactivity than older platelets. So the Platelet indices including Mean Platelet Volume, Plateletcrit, and Platelet Distribution Width may emerge a marker of CAD. The aim of the study is to study the role of Platelet indices in patients with Acute Coronary Syndrome and to see whether increase in platelet indices is associated with increased risk of Acute Coronary Syndrome.

**Materials and methods:** In the present study patients who presented to NIMS with Acute Coronary Syndromes including Acute STEMI, NSTEMI were included. Platelet indices calculated in all these patients at the time of admission through automated analyzers. The effect of Platelet indices in patients with ACS is studied and compared with age and sex matched controls.

**Results:** In our study total of 53 patients with ACS were studied. In our study MPV did not show any statistically significant difference in patients with ACS. On the other hand there was a significant difference in PCT & PDW in patients with ACS. Patients with ACS have higher values of PCT&PDW when compared to age matched controls.

**Conclusion:** Larger platelets are hemostatically more active and are a risk factor for developing coronary thrombosis and subsequent acute coronary event (Acute STEMI/NSTEMI). Patients with larger platelets can easily be identified during routine hematological analysis and could possibly benefit from preventive treatment.

## Unusual symptom in a patient with anterior wall STEMI



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**Case report:** 42 year old male was admitted with chest pain and diagnosed to have anterolateral wall STEMI. He was thrombolysed with inj. tenecteplase. On day 2, he complained of passing milky urine. He had h/o similar complaint 3 episodes in the past 1 year when he consumed fatty diet. No h/o filariasis. Chyluria was suspected and urine was sent for analysis which proved it as chyluria by ether test. Though he did not have prior h/o fatty diet consumption during this episode, he had chyluria secondary to stress induced by MI. There are rare instances reported where emotional stress precipitated chyluria. Lymphoscintigraphy revealed damaged left lymphatics. He underwent stenting to proximal LAD and is under regular follow up. Investigations to rule out hypercoagulability secondary to chyluria (protein c, protein s, antithrombin) were done and they were within normal limits. In view of few episodes of chyluria, surgical intervention is not needed for this patient.

This case is being reported in view of rare symptom during acute MI.

## Correlation in between coronary artery disease severity and peripheral artery disease



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**Background:** Patient of coronary artery disease (CAD) and peripheral arterial disease (PAD) shares common risk factors. This study was designed to find out relationship between coronary artery disease as assessed by syntax score (SS) and peripheral arterial disease as assessed by ankle brachial index (ABI).

**Material and method:** This was an observational cross-sectional study. 100 adult patients of suspected stable CAD were included. Exclusion criteria were prior history of confirmed CAD, valvular heart disease, LV dysfunction, prior coronary artery bypass or PCI, previous surgery or intervention for PAD, deformity in upper and lower limbs, unclear results of ABI or angiography, presence of severe end organ disease.

ABI was performed by using a hand held vascular Doppler system of 8 MHz and an aneroid sphygmomanometer. Coronary angiography was performed and the syntax score was calculated by using Syntax score Calculator software version 2.11.

**Results:**

Correlation table for ABI and SS.

ABI	SS (0-22)	SS (23-32)	SS (>32)
ABI < 0.9	18.00	3.00	8.00
ABI ≥ 0.9	59.00	7.00	5.00

(Values represent number of patients) (Significant at 0.01 level). There was significant correlation in between higher syntax score (SS > 32) and lower ABI (ABI < 0.9), lower ABI and higher SS were also significantly associated with male sex, hypertension, diabetes, smoking, family history of CAD and dyslipidemia.

**Conclusion:** There is significant correlation in between high syntax score (SS > 32) and ABI (<0.9).

## Acute Coronary Syndrome (ACS) in medical intensive care units: A different entity



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**Introduction:** ECG changes of ST elevation in a VR and V1 with global ST depression in patients with chest discomfort are considered to represent very high risk ACS pool with possible left main coronary artery or severe triple vessel disease needing early coronary angiography and intervention. Nevertheless, such alarming ECG changes could also be a manifestation of a relatively benign entity in the setting of Medical ICUs. We report 4 such patients in the last 5 years who, while being treated for other systemic illnesses, developed "left-main like" ECG changes.

**Case report:** 3 of these 4 patients with mean age of 27 years had no comorbidities for coronary artery disease (CAD). They were ventilated patients on treatment for septic shock, on escalated doses of vasopressors as per the ICU protocol. They developed "left-main

like" ECG changes with severe LV dysfunction and global LV hypokinesia. Cardiologist's opinion was urgently sought to decide on the need for early intervention. However, considering their age, with no known CAD risk factors, possibilities of Takotsubo cardiomyopathy, toxic myocarditis, high dose vasopressor-induced coronary vasospasm were considered likely. Vasopressors were gradually tapered accepting mean pressures of 50 mmHg, following which there was dramatic settling down of ECG changes with reversibility of LV dysfunction. The fourth patient with normal CT coronary angiography preoperatively, developed hypotension post-bariatric surgery, needing vasopressors following which she developed "left-main like" ECG changes with global LV dysfunction. She was resuscitated with fluids, gradually weaned off vasopressors, with normalization of ECG changes and LV function. Of these four patients, one succumbed to the systemic illness and other 3 recovered completely with no evidence of any residual ECG changes or LV dysfunction.

**Discussion:** Vasopressor- coronary vasospasm presenting as Acute Coronary Syndrome is a known clinical entity, which should be considered in the setting of MICU admitted sick patients. While atherosclerotic plaque-rupture syndromes constitute the vast majority of ACS that cardiologists encounter, failure to consider this entity can lead to unnecessary investigations, medication and interventions leading to even worsened morbidity and mortality.

## Spontaneous Coronary Artery Dissection – Rarity is a myth – A single center observation and review



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**Background:** True Spontaneous Coronary Artery Dissection (SCAD) is an extremely rare event and 80% of cases occur in young women. Sudden death has been reported commonly and nearly 69% of cases were diagnosed postmortem.

**Objective:** To study the clinical and hagiographic features of 14 patients with SCAD.

**Methods:** Retrospective analysis of coronary angiogram in 14 patients who were found to have Coronary Artery Dissection. The number, site of vessels involved, risk factors and LV dysfunction were studied.

**Results:** Out of 14 cases of Coronary Artery Dissection majority occurred in men 12 (85.7%) with age 31–70 years (mean 51.2 years). The clinical setting was MI/Post MI angina in 8 (AWMI-3, IWMI-2), Unstable angina in 4 and Non cardiac symptoms in 2. Diabetes mellitus was present in 8 and Hypertension in 5 patients. 3 of the 14 patients had history of Chronic Smoking and Alcohol intake. Of the 14 patients – 2D Echo showed RWMA in 11 (78.8%) which is correlated with Ischemic Changes in ECG, 9 had LV dysfunction (Mild – 5 and Moderate – 4) and none showed LV clot. In all 14 cases the dissection was seen only in Single Vessel. The dissection involved LAD – 8, Circumflex – 1 and RCA – 5. One patient's CAG showed Intra Luminal Thrombus (7.2%). Overall CAD incidence: SVD in 9, DVD in 3 and TVD in 2. Of 14 patients 3 underwent PCI using DES (2 for SCAD lesion and 1 for Non SCAD LAD lesion), 3 underwent CABG and rest of the 8 patients were managed medically. On average follow up is 50.2 days (ranges from 15 to 15 days). Of the 14 patients – 12 survived and 2 were not traceable. One of the medically managed patients has survived with recurrent respiratory failure – once he was intubated for mechanical ventilation support too.

**Conclusion:** SCAD is a rare cause of Acute Coronary Syndrome and sudden cardiac death. Early diagnosis by coronary Angiogram and proper treatment strategy may help in preventing sudden cardiac

death. Patients who were found to have Coronary Artery Dissection. The number, site of vessels involved, risk factors and LV dysfunction were studied.

## Young patients with ACS – Thrombus containing lesion presenting late – Wait & intervene strategy



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**Background:** Acute coronary syndromes include several clinical and anatomical aspects of coronary disease, especially including intracoronary thrombus. Percutaneous revascularization of thrombus-containing lesions is associated with increased incidence of death and myocardial infarction.<sup>1</sup> However, intracoronary non-occlusive thrombi were rarely observed in patients without angiographic coronary lesions and have previously been proposed as a possible cause of myocardial infarction in those with normal coronary arteries.<sup>2</sup> Exclusively medical treatment was used in most cases but its efficiency and tolerability remain unknown. Our study investigated the characteristics, etiologies and long-term follow-up of patients with intracoronary non-occlusive thrombus with and without angiographic coronary lesions, who were medically treated in the acute phase. A review of the literature reporting such cases was performed.

**Materials and methods:** This is a prospective analytical study included patient with ACS and thrombus containing lesion admitted in Government Rajaji Hospital (tertiary hospital) in TamilNadu during January 2013 to March 2015. Risk factors, clinical, angiographic profile and follow up data were recorded and analyzed. Patients presenting to ICCU with ACS were given pharmacological treatment. Later patient were subjected for coronary angiogram. Patients were identified who had intracoronary thrombus containing lesions with TIMI 0–3 flow. The angiographic presence of a thrombus was defined as a non-calcified filling defect outlined on at least three sides by contrast media. We included patients with thrombus greater or equal to grade 1,<sup>3</sup> thrombolysis in myocardial infarction (TIMI) flow 0–3<sup>4</sup> and with or without significant coronary lesions.

Age, sex, cardiovascular risk factors and left ventricular ejection fraction were recorded. Clinical conditions known to be associated with hypercoagulation, such as pregnancy, oral contraceptive or drug use, were searched for systematically. Coronary angiograms and treatments were detailed. Follow-up was performed. The following data were analyzed: death (cardiac death or all-cause mortality), recurrence of myocardial infarction, need for revascularization, heart failure, ventricular arrhythmia, bleeding complication, stroke, thromboembolic event, left ventricular ejection fraction and medical treatment.

**Results:** A total of 50 patients who presented to our ICCU during the period of January 2013 to March 2015 with acute coronary syndrome were taken for our study. Those patients essentially had thrombus containing lesions. In this group 19 patients were under 40 years of age. There were 18 males, 1 female in the group. 9 patients were advised medical treatment. 8 patients underwent PCI. 2 patients were referred for CABG. The median follow up period was 2 months. Patient s advised medical treatment fared well during follow up. 1 patient in PCI group died during 2 months of follow up. 1 patient in PCI group needed revascularization.