Joint Meeting of Coronary Revascularization
December 11th-12th, 2015
Abstract Presentation

The Relationship between PTX 3 and Endothelial Dysfunction in Asian Patients with Non-ST Elevation Acute Coronary Syndrome

NMRR ID: 13-30-14799

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INTRODUCTION

- Incidence of ACS admission in Malaysia population-47.1% per 100,000 population based on NCVD 2006 (33% NSTEMI, 25% UA, 42% STEMI)

- Biomarkers in NSTE-ACS

TROPONIN

CK-MB

- Myocardial necrosis
- Specificity and sensitivity remain insufficient

INTRODUCTION

Potential Biomarkers in NSTE-ACS

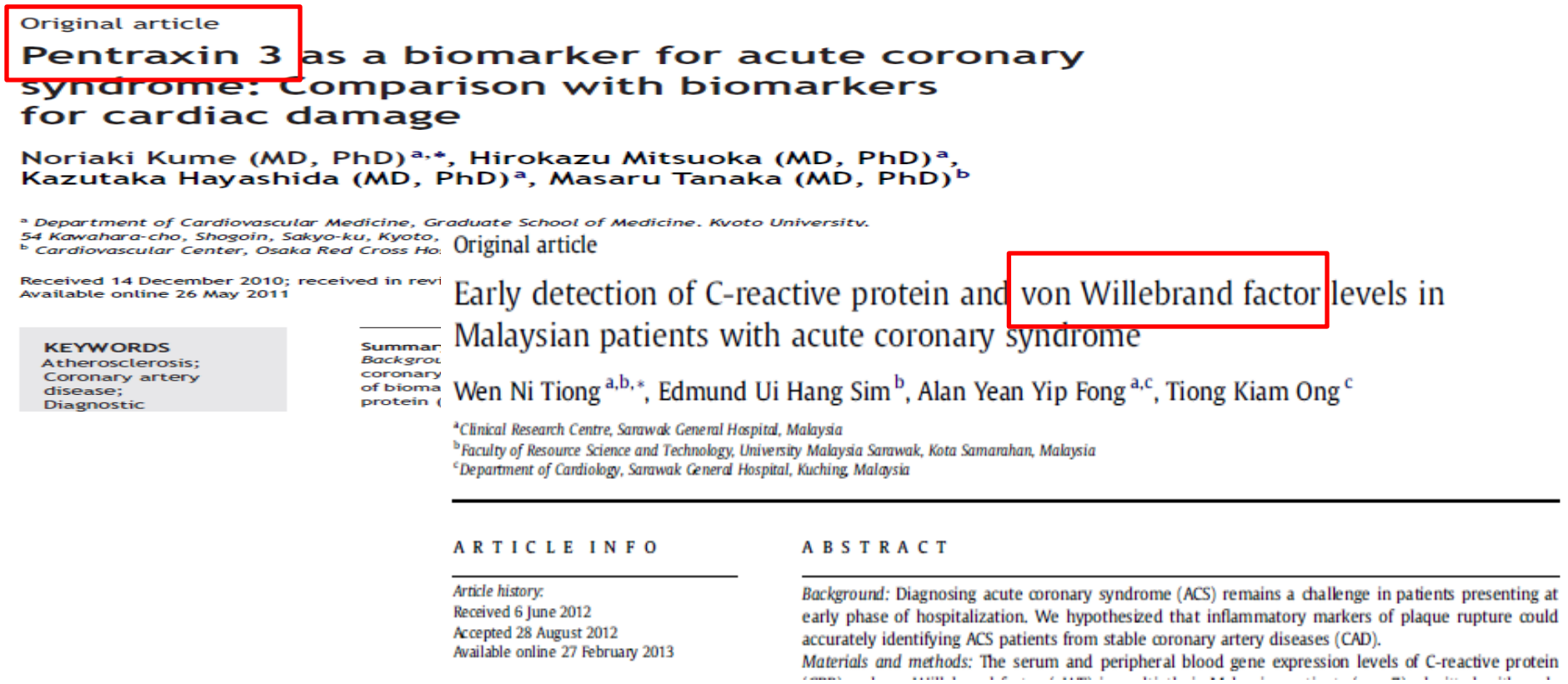
- C-Reactive Protein
- Interleukin-6 (IL-6)
- Von Willebrand Factor (vWF)
- Lipoprotein-associated phospholipase A
- Pentraxin-3 (PTX 3)
- Myeloperoxidase (MPO)
- Soluble CD40-ligand (sCD40L)

INTRODUCTION

Potential Biomarkers in NSTE-ACS

- C-Reactive Protein
- Interleukin-6 (IL-6)
- Von Willebrand Factor (vWF) ← Endothelial dysfunction
- Lipoprotein-associated phospholipase A
- Pentraxin-3 (PTX 3) ← Inflammation & atherosclerotic changes of vascular wall
- Myeloperoxidase (MPO)
- Soluble CD40-ligand (sCD40L)

RATIONALE



Original article

Pentraxin 3 as a biomarker for acute coronary syndrome: Comparison with biomarkers for cardiac damage

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Received 14 December 2010; received in revi
Available online 26 May 2011

KEYWORDS
Atherosclerosis;
Coronary artery disease;
Diagnostic

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Original article

Early detection of C-reactive protein and von Willebrand factor levels in Malaysian patients with acute coronary syndrome

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ARTICLE INFO

Article history:
Received 6 June 2012
Accepted 28 August 2012
Available online 27 February 2013

ABSTRACT

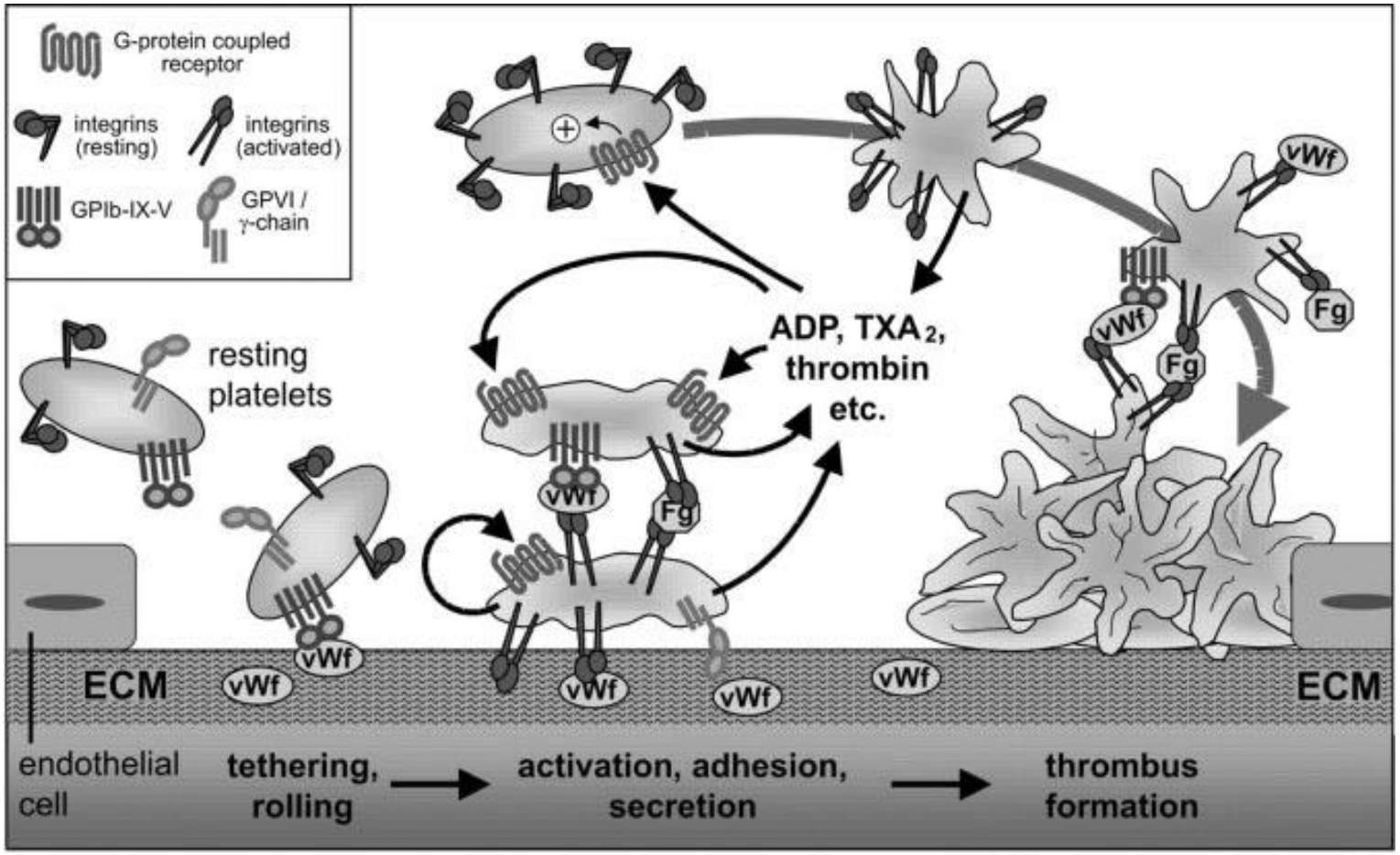
Background: Diagnosing acute coronary syndrome (ACS) remains a challenge in patients presenting at early phase of hospitalization. We hypothesized that inflammatory markers of plaque rupture could accurately identifying ACS patients from stable coronary artery diseases (CAD).
Materials and methods: The serum and peripheral blood gene expression levels of C-reactive protein

- Ideal biomarkers for cardiac damage
- Higher risk of vulnerable plaque rupture

PENTRAXIN-3 (PTX 3)

- Member of pentraxin superfamily
- Identified as long pentraxin
- Expressed in monocytes, macrophages, endothelial cells, dendritic cells, fibroplasts and epithelial cells
- Increased in atherosclerostic plaque
- Useful marker for localized vascular inflammation and damage

Von Willebrand Factor (vWF)

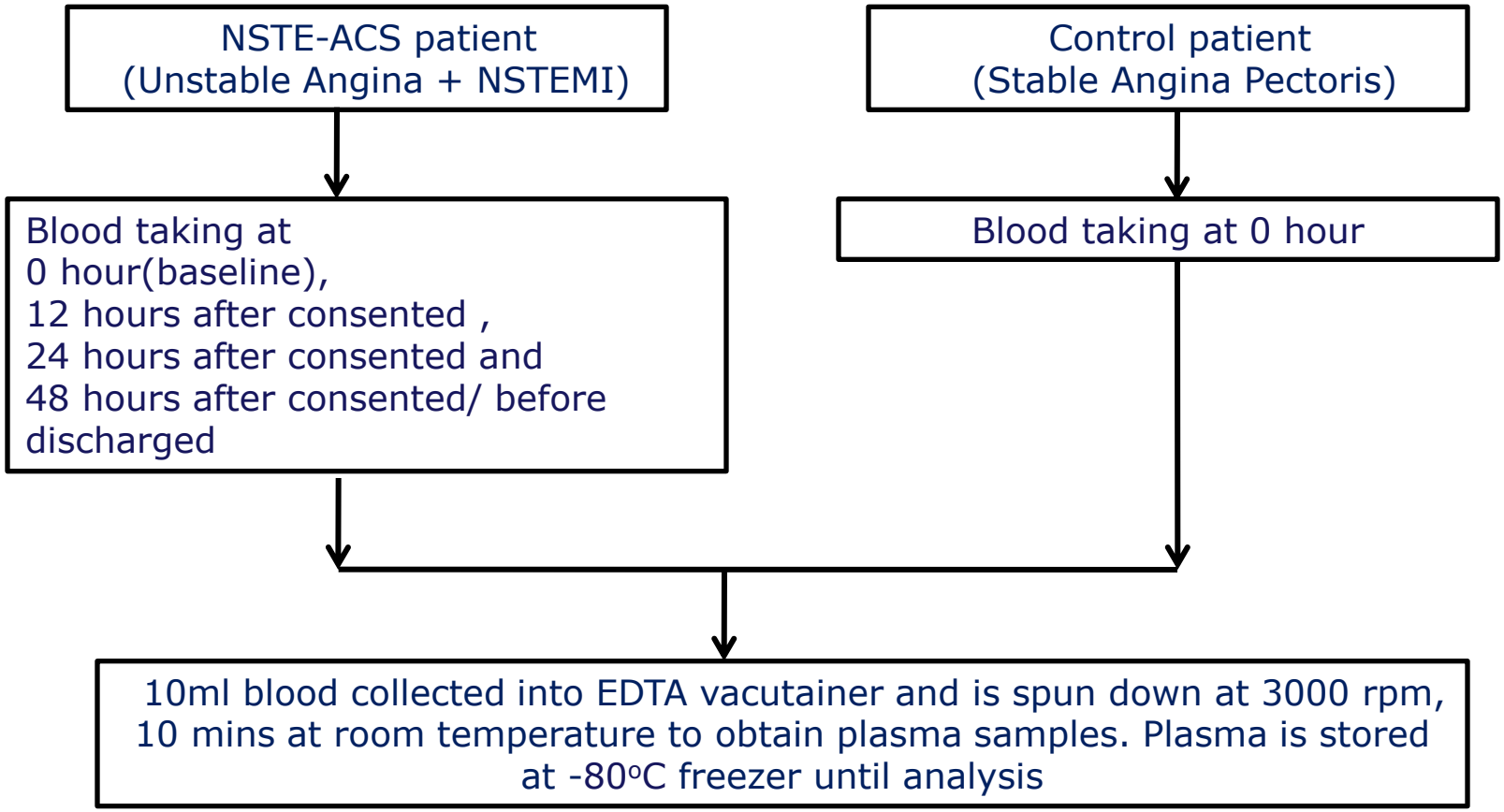


Functions of vWF in platelet activation at sites of vascular injury

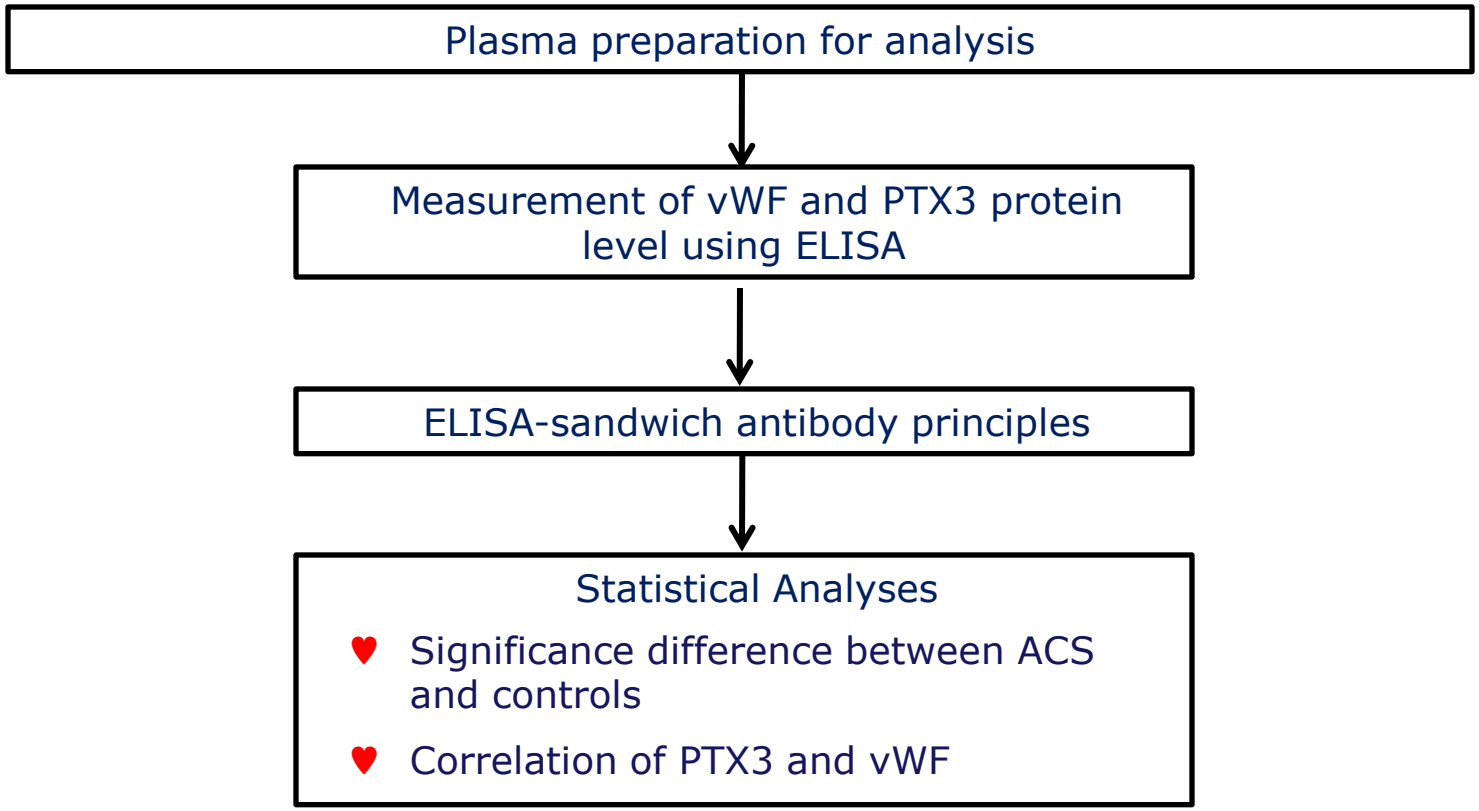
OBJECTIVE

- To ascertain the relationship between PTX3 and endothelial dysfunction in Asian patients with NSTE-ACS

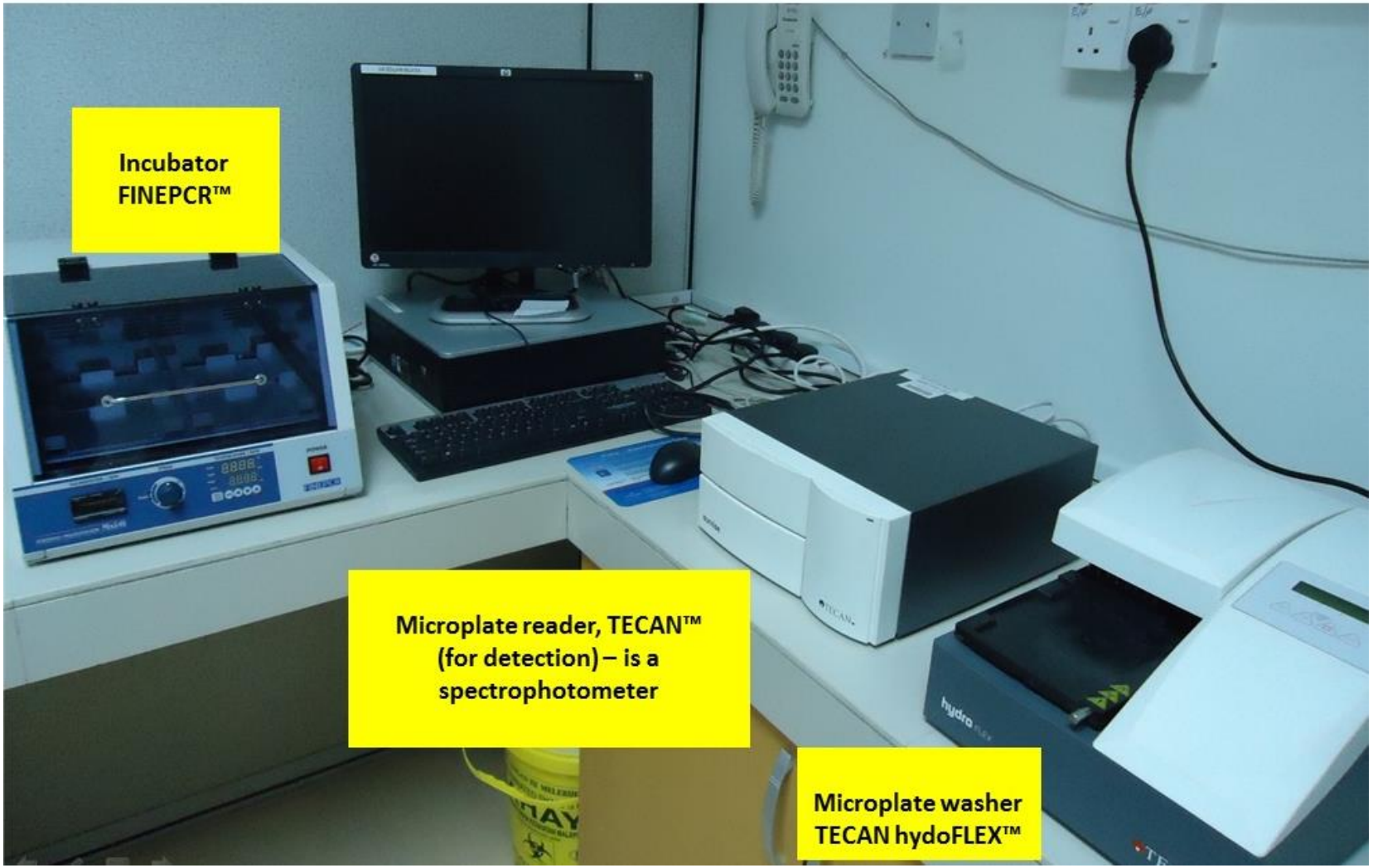
MATERIALS & METHODS



Enzyme-Linked Immunosorbent Assay (ELISA)



ELISA Facilities in CRC, SGH



Statistical Analysis

- All statistical analyses were done by using SPSS 17.0
- Non parametric results are expressed as medians with interquartile range (IQR) and comparison made using Mann-Whitney
- All comparison were considered significant at $p<0.05$

DEMOGRAPHIC DATA (1)

Patients Characteristics		NSTE-ACS (n=7)
Age (Medium± IQR)		59.29(9.6)
BMI (Medium± IQR)		23.2(4.75)
Gender (N, %)	Male	6(85.7)
	Female	1(14.3)
Race (N, %)	Malay	4(57.1)
	Chinese	2(28.6)
	Bidayuh	1(14.3)
Family History of CVD		4(57.1)

DEMOGRAPHIC DATA (2)

Patients Characteristics			NSTE-ACS (n=7)
Cardiovascular Disease Risk Factor(s) (N,%)	Hypertension		5(55.6)
	Dyslipidemia		6(66.7)
	Diabetes		4(44.4)
	Smoking	Never	3(33.3)
		Former	3(33.3)
		Current	3(33.3)

RESULTS

Markers	NSTE-ACS (n=7)	Control (n=2)
Pentraxin-3	4.04(5.68)	1.38
Von Willebrand Factor (vWF)	3.54(1.93)	2.86

Correlation coefficient	r=0.67	p=0.10

CONCLUSION

- Elevated PTX3 levels were found in patients with NSTEACS
- No significant relationship with endothelial dysfunction, reflected by vWF levels
- The degree of inflammation is greater than endothelial dysfunction associated with vulnerable plaque rupture.

LIMITATIONS

- Single center experience
- Small sample size

THANK YOU.

RESULTS

Markers	NSTE-ACS (n=7)	Control (n=2)	P value
Pentraxin-3	4.04(5.68)	1.38	0.04
Von Willebrand Factor (vWF)	3.54(1.93)	2.86	0.378