Imaging

1 LONG-TERM PROGNOSTIC VALUE OF SIMULTANEOUS ASSESSMENT OF ATHEROSCLEROSIS AND ISCHEMIA IN PATIENTS WITH SUSPECTED ANGINA: IMPLICATIONS FOR ROUTINE USE OF CAROTID ULTRASOUND DURING STRESS ECHOCARDIOGRAPHY

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Background The long-term clinical impact of carotid plaque and carotid plaque burden (CPB) in patients with new onset suspected stable angina beyond stress echocardiography (SE) with no history of coronary artery disease (CAD) is not known.

Methods Consecutive patients referred for SE underwent simultaneous carotid ultrasonography to assess CPB. Patients were prospectively followed up for major adverse events (MAE).

Results Of the 592 patients, 573 (age 59±11, 45% male) could be followed up. During a mean follow up of 7±1.2 years, 85 patients had first MAE (all-cause mortality and acute myocardial infarction: 67 (hard events) and 18 unplanned revascularisation). On multivariate Cox regression analysis, pre-test probability (PTP) of CAD, peak wall thickness scoring index (pWTSI) and CPB predicted MAE ($p<0.0001$ for all); however, only CPB retained significance for both hard events and hard cardiac events ($p=0.008$ and 0.001 , respectively) (table 1A-B). MAE and hard events were least in patients with normal SE and absent carotid plaque (annualised event rate: 1.1% and 1.01% respectively) with significant increase in normal SE and plaque disease (2.4% and 2.05%, $p=0.004$ and 0.01 respectively) (figure 1A-B).

Abstract 1 Figure 1 Kaplan-Meier curves of combination of stress echocardiography and carotid ultrasonography

Abstract 1 Table 1 Cox regression analysis for the prediction of (A) Major adverse events; (B) Hard events

A.				
	Univariable Analysis p value	Multivariable Analysis p value	HR	95% CI
PTP	<0.0001	0.048	1.628	1.003 – 2.643
Aspirin	<0.0001	0.122	1.440	0.907 – 2.287
Statin	0.002	0.395	1.230	0.764 – 1.979
CPB	<0.0001	<0.0001	1.195	1.101 – 1.298
pWTSI	<0.0001	<0.0001	4.367	2.312– 8.250
B.				
	Univariable Analysis p value	Multivariable Analysis p value	HR	95% CI
PTP	<0.0001	0.025	1.871	1.081 – 3.240
Aspirin	<0.0001	0.181	1.411	0.849 – 2.345
Statin	0.004	0.372	1.269	0.752 – 2.143
CPB	0.001	0.008	1.145	1.036 – 1.265
pWTSI	0.045	0.414	0.610	0.186 – 1.999
Any revascularisation	<0.0001	<0.0001	4.195	2.246 – 7.835

CI: Confidence interval, CPB: Carotid plaque burden, HR: Hazard ratio, PTP: Pre-test probability, pWTSI: peak wall thickness scoring index

Presence of plaque did not impact on these outcomes in abnormal SE.

Conclusion In patients with suspected stable angina, carotid atherosclerosis and myocardial ischemia in combination provide synergistic MAE information long term but atherosclerosis predicted hard events beyond myocardial ischemia particularly in patients with normal SE.

Conflict of Interest None

2 REVERSIBLE EXERCISE-INDUCED LEFT VENTRICULAR DYSFUNCTION IN SYMPTOMATIC PATIENTS WITH PREVIOUS TAKOTSUBO SYNDROME – INSIGHTS FROM EXERCISE ECHOCARDIOGRAPHY

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Introduction Takotsubo syndrome (TTS) is an acute heart failure syndrome usually associated with rapid and spontaneous recovery of left ventricular (LV) function. However, approximately 10% of patients have persistent symptoms and seek further medical advice.

Purpose To determine the cardiovascular haemodynamic and LV contractile response to exercise in these TTS survivors with ongoing symptoms.

Methods This was a case-control study of 20 symptomatic patients with previous TTS referred for treadmill exercise echocardiography (EE), and 20 age-, sex- and ethnicity-matched control subjects with normal treadmill EE. Among

the TTS group, EE was performed at a median of 8 months (mean 17±21 months) following the index event. Demographic characteristics, resting and EE data were collected. LV ejection fraction (EF) was measured at rest and peak stress. Global longitudinal and circumferential strain (GLS, GCS) were measured at rest.

Results All 20 TTS patients were Caucasian postmenopausal females (mean age 63.5 ± 6.6 years). There were no significant differences in body mass index (BMI), resting heart rate (HR) and the prevalence of cardiovascular risk factors compared to controls. Resting systolic and diastolic blood pressure (SBP, DBP) were higher in TTS patients (144±17 mmHg versus 128±18 mmHg, and 81±10 mmHg versus 74±9

Abstract 2 Table 1 Resting echo data

RESTING ECHO DATA	Control (n=20)	TTS (n=20)	P
LAVi (ml/m ²)	30±10	29±9	NS
LVMi (g/m ²)	65±15	70±17	NS
E/e' average	8.7±1.9	9.3±2.7	NS
RV FAC (%)	44±9	50±8	0.03
SPAP (mmHg)	25±6	25±4	NS
LVEDV (ml)	86±17	98±19	0.04
LVESV (ml)	28±9	36±10	0.02
LVEF (%)	67±7	63±7	NS
GLS (%)	-22.0±3.3	-21.6±2.3	NS
GCS (%)	-33.2±6.8	-33.5±10.5	NS