lar damage in patients with AMI. We investigated MCE with harmonic power Doppler (HPD), CFR and CF by using transonic echocardiography (TTE) in predicting functional recovery. Methods: We performed MCE (SONOS5500, Philips) by using 1.4 intermittent HPD with Levovist at rest and during ATP in 30 patients two weeks after anterior AMI. Peak videointensity was measured within the risk and control regions. The peak videointensity ratios of the risk area to the control area (PIR) at rest and during hyperemia were calculated. We measured CFR of the left anterior descending artery (LAD) two weeks after AMI. CF of LAD by TTE was also obtained within 24 hours after successful revascularization, and DDT of LAD was measured. Left ventricular (LV) end-diastolic volume (EDV), LV end-systolic volume (ESV), LV ejection fraction (EF) and LV mass index (LVM) were measured. Doppler-derived parameters such as peak instantaneous flow velocity of LV outflow tract and left atrium, peak instantaneous flow velocity of aortic valve, systolic and diastolic blood pressure were calculated. Results: PIs were divided into 2 groups based on the severity of microvascular damage. CFR correlated with DDT (r=0.724, p<0.006). Conclusions: MCE, CFR and CF are useful for predicting functional recovery following AMI.

1043-48
Feasibility, Symptoms, Adverse Effects and Complications Associated With Noninvasive Assessment of Coronary Flow Velocity Reserve During Intravenous Adenosine Infusion: Experience in 1,222 Patients
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Background: Noninvasive assessment of coronary flow velocity reserve (CFVR) with contrast-enhanced transonic Doppler echocardiography (CTE) is an increasingly used method to evaluate the effects of epicardial coronary stenosis and coronary microvascular function. The purpose of this investigation was to analyze and review the Cagliari University experience in assessing CFVR with CTE-TTE to define the feasibility, safety, adverse event profile, and complications rate of the test.

Methods: We performed CTE-TTE in the left anterior descending coronary artery (LAD) with CE-TTE during adenosine infusion. The pulsed wave Doppler of blood flow velocity was recorded in the LAD at rest and after maximum vasodilatation by adenosine infusion (140 mcg/kg/min for 3 minutes). We analyzed 1422 consecutive CE-TTE-CFVR studies starting January 2000 to July 2002. The patients (372 female and 850 males; age: 62±1.6 years) were referred for CTE-TTE studies for different reasons: 871 pts for follow up after elective and primary PTCA on LAD, 267 pts for angina, 58 pts for hypertrophic cardiomyopathy, 22 pts for hypercholesterolemia, 6 pts for systemic sclerosis, 47 pts for other reasons.

Results: A complete CFVR study was achieved in 1200 pts (feasibility: 98.2%), also performed in the early phase of acute coronary syndrome. In the remaining 22 pts (1.8%) the study was interrupted because of failure to visualize LAD (7), hypertrophia (7), chest pain without EKG changes (4), nausea and headache (3), chest pain with isochronic EKG (1). Minor symptoms or adverse effects occurred in 521 pts (43%) not requiring test termination: hypertrophia (15%), flushing (9%), chest pain without EKG changes (7%), headache (6%), minor arrhythmias (3.6%), chest pain with EKG changes (1%). No major complications were observed during all studied.

Conclusion: Noninvasive measurement of CFVR in LAD by CTE-TTE is a very feasible method with very low incidence of adverse events and complications. It can be used and safely performed in the evaluation of atherosclerotic LAD disease and in a broad spectrum of cardiac disease with microvascular impairment.

1043-49
Measurement of Renal Blood Flow Using Contrast-Enhanced Ultrasound in Patients With Renal Artery Stenosis
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Background: Microbubbles behave like RBC in microvasculature, therefore we can measure myocardial blood flow by measuring velocity of microbubbles using ultrasound. We hypothesized that abnormal renal blood flow from renal artery stenosis can be measured using contrast-enhanced ultrasound (CEUS).

Methods: Renal blood flow was measured using CEUS in 16 patients (10 males, 49±21 years) with unilateral renal artery stenosis, at rest and during intravenous infusion of dopamine (2.5 mcg/kg/min). In both kidneys, refilling rate of microbubbles after high power destruction was assessed using low mechanical-index Power Pulse Inversion (HDI 5000, ATL) during continuous infusion of microbubbles. In 6 patients, DTPA-renogram was performed for comparison.

Result: Microbubble velocity in diseased kidney was significantly lower than the velocity in control kidney (0.46±0.24 vs 0.91±0.49, p<0.001). During increased renal blood flow with dopamine, significant difference in β was also observed between diseased and control kidney (0.78±0.26 vs 1.06±0.36, p<0.05). In 5 patients with abnormal DTPA-renogram, CEU showed marked reduction in 5 of diseased kidney (28.66% of control kidney).

Conclusion: Abnormal renal blood flow can be measured using CEU in patients with renal artery stenosis. CEU may be useful in screening of renal artery stenosis.