THE PROGNOSTIC VALUE OF LEFT VENTRICULAR GLOBAL LONGITUDINAL STRAIN IN PATIENTS WITH NON ST ELEVATION MYOCARDIAL INFARCTION AND PRESERVED EJECTION FRACTION.

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Introduction

Longitudinal strain assessed by 2D speckle tracking echocardiography (STE) has been validated as a method for evaluating both global and regional myocardial deformation. Global longitudinal strain (GLS) is considered as an early sensitive marker of subclinical ventricular dysfunctiondespite preserved ejection fraction (EF).

Aim of the Work

To detect early left ventricular (LV) dysfunction in patients with non-ST elevation myocardial infarction (NSTEMI) with preserved EF using GLS, and todetermine itsprognostic value.

Patients and Methods

This prospective study was conducted on 51 patients presenting with NSTEMI and preserved EF (≥50%) over a period of one year.
STE was performed for all patients at baseline and at 6 months' follow-up.

Results

Follow-up at six months included 40 patients, 19 of whom underwent revascularization. Major adverse cardiac events (MACE) occurred in 24 patients, including non-fatal MI (n=3), heart failure (HF; n=7), cardiovascular death (n=2), and rehospitalization (n=12).
In NSTEMI patients with preserved EF the GLS was lower than the control group with preserved EF
Baseline left ventricular GLSwas significantly lower in patients who developed HF than those who didn't (P value=0.042). It was not significantly differentbetween patients with non-fatal MI and those without, nor patients with rehospitalization and without rehospitalization.
GLS at 6 months was significantly lower in patients who developed HF than patients who didn't (P value =0.002), in patients with rehospitalisation (P value <0.001), and in patients with non-fatal MI (P value =0.046).

Table 1: Relation between GLS at baseline and MACE of the studied patients

	N=40 GLS at baseline (%)	P-value
Non-fatal MI		
Yes (n=3)	15 ± 4	0.372
No (n=37)	16.79 ± 3.26	
HF		
Yes (n=7)	14.37 ± 2.71	0.042*
No (n=33)	17.15 ± 3.24	
Rehospitalization		
Yes (n=14)	15.96 ± 4.35	0.269
No (n=26)	17.03 ± 2.59	
Cardiovascular death		
Yes (n=2)	23.5 ± 3.54	0.002*
No (n=38)	16.3 ± 2.91	
Total death		
Yes (n=2)	23.5 ± 3.54	0.002*
No (n=38)	16.23 ± 2.91	

Table 2: Multivariate logistic regression of HF and (comorbidities and GLS)

	Odds ratio	95% CI	P
DM	0.431	0.044 - 4.154	0.466
HTN	1.247	0.233 - 6.655	0.795
Dyslipidemia	0.756	0.114 - 4.988	0.771
Smoker	1.845	0.166 - 20.399	0.617
Family history	5.892	0.802 - 78.463	0.997
GLS (%)	2.841	0.424 - 19.039	0.014*

Conclusion

In NSTEMI patients with preserved EF, GLS was able to detect early left ventricular dysfunction. Reduced GLS was associated with MACE, namely HF, non-fatal MI and repeated hospitalization.