

SUPPLEMENTARY MATERIAL FOR MANUSCRIPT

miR-146a-5p, miR-223-3p and miR-142-3p as Potential Predictors of Major Adverse Cardiac Events in Young Patients with Acute ST Elevation Myocardial Infarction - Added Value over Left Ventricular Myocardial Work Indices

Sorted by the order of appearance in main manuscript:

Table S1. Echocardiographic parameters at baseline and at follow up in the entire population.

	Population at baseline	Population at follow up	P value
2D LVEDV (ml)	103.51±23.67	114.33±31.08	0.002
2D LVESV (ml)	61.27±22.26	60.63±27.04	0.772
2D EF (%)	42.08±7.721	47.59±8.5	0.000
3D LVEDV (ml)	110.85±24.4	121.5±26.85	0.000
3D LVESV (ml)	64.82±22.67	63.17±23.55	0.256
3D LVEF (%)	42.78±8.23	49.17±7.71	0.000
LV GLS	-13.5±3.47	-14.9±3.65	0.011
LV mechanical dispersion	67.84±19.27	65.67±30.91	0.656
E/e' (LV filling pressures)	8.57±2.72	8±3.14	0.248
GWI	1180.29±326.58	1318.4±360.2	0.007
GCW	1493±335.65	1663.29±412.47	0.015
GWW	182.88±109.62	181.51±95.44	0.943
GWE	87.55±6.95	90±6.49	0.004

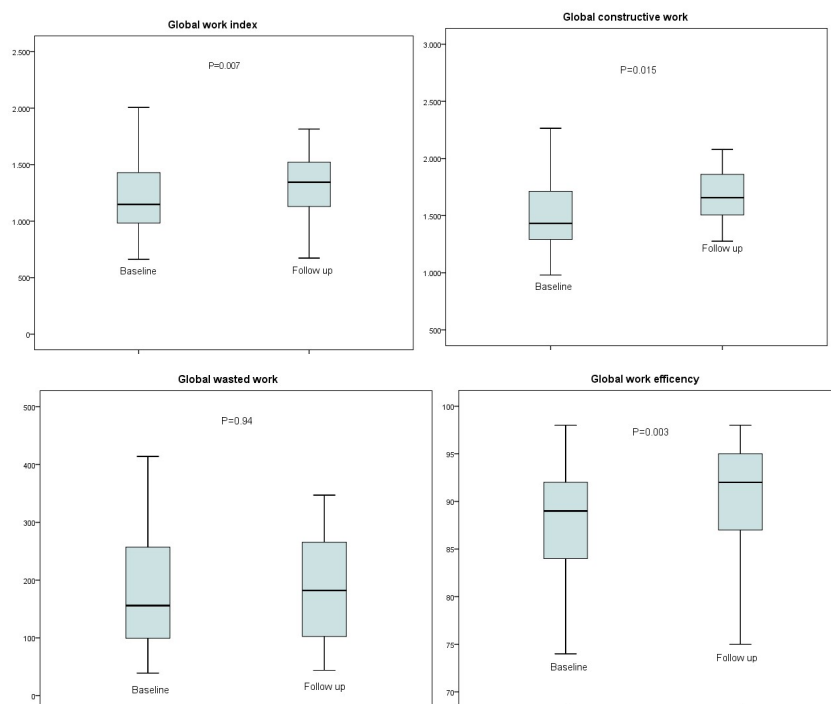


Figure S1. Changes in myocardial work indices after STEMI (baseline and 6 months follow up): GWI (upper left), GCW (upper right), GWW (lower left), GWE (lower right).

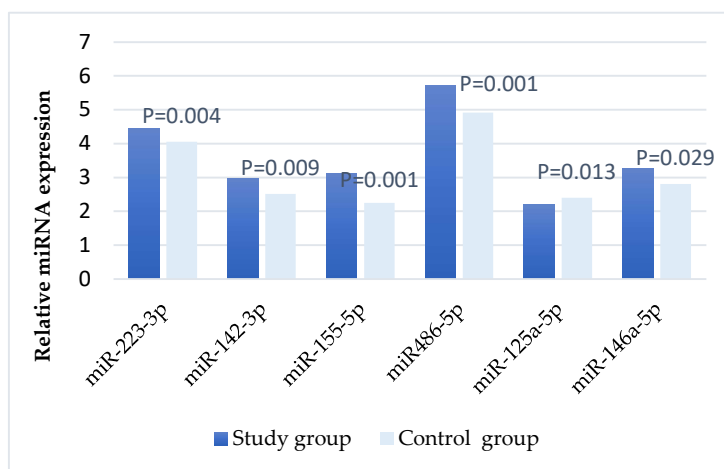


Figure S2. miRNA levels at baseline in the study population and in the control group.

Table S2. COX univariate regression for the occurrence of MACE.

	Parameters at baseline	OR	CI	P value
<i>Clinical characteristics</i>	Age	1.002	0.967-1.002	0.967
	Sex	3.65	0.912-14.621	0.067
	Killip class	3.487	1.984-6/127	<0.0001
<i>Biological parameters</i>	Leukocytes	1	1.000-1.000	0.698
	Haemoglobin	0.929	0.779-1.108	0.464
	Glycemia	0.072	0.999-1.022	0.111
	Creatinine	3.032	0.173-53.026	0.447
	Cholesterol	0.992	0.98-1.005	0.227
	CK-MB max	1.005	1.003-1.008	<0.0001
	2D LVEF	0.816	0.730-0.912	<0.0001
<i>Echocardiographic parameters</i>	2D LVEDV indexed	1.085	1.027-1.146	0.004
	2D LVESV indexed	1.124	1.060-1.192	<0.0001
	GLS LV	2.34	1.533-3.587	<0.0001
	3D LVEF	0.775	0.678-0.886	<0.0001
	3D LVEDV indexed	1.076	1.017-1.137	0.01
	3D LVESV indexed	1.127	1.058-1.200	<0.0001
	E/e' ratio	1.855	1.379-2.494	<0.0001
	GWI	0.992	0.988-0.996	<0.0001
	GCW	0.995	0.991-0.998	<0.0001
	GWW	1.0008	1.002-1.014	0.007
	GWE	0.810	0.716-0.917	<0.0001

Table S3. Univariate and multivariate regression analysis of myocardial work indices (at baseline) as predictors of MACE.

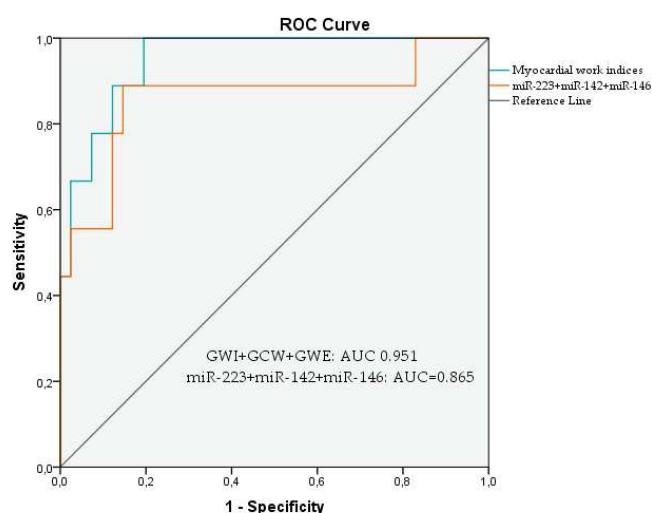
	Univariate regression analysis				COX multivariate regression analysis		
	Chi square	Wald	OR	P value	Wald	P value	Chi-square for model
GWI	21.065	13.9	0.992	0.000	5.909	0.015	27.57 P value 0.0001 C statistic 0.938, CI 0.884-0.991
GCW	14.143	9.131	0.995	0.003	0.452	0.501	
GWW	7.435	7.243	1.008	0.007	-	-	
GWE	19.45	15.408	0.777	0.000	4.118	0.042	

Table S4. ROC analysis for myocardial work indices at baseline as predictors for MACE at follow up.

	<i>AUC</i>	<i>P value</i>	<i>Cut off value</i>	<i>Sensibility</i>	<i>Specificity</i>
CWI	0.932	0.000	799	88.9	92.7
GCW	0.862	0.001	1232	88.9	82.9
GWW	0.812	0.004	186	77.8	63.4
GWE	0.932	0.000	82.5	88.9	80.5

Table S5. ROC analysis -performance of MACE prediction using miRNAs baseline values.

	<i>AUC</i>	<i>P value</i>	<i>Cut off value</i>	<i>Cut off value (Log 10)</i>	<i>Sensibility</i>	<i>Specificity</i>
miR-223-3p	0.832	0.002	146113	5.164	77.8%	87.8%
miR-142-3p	0.732	0.031	1115	3.047	77.8%	68.3%
miR-146a-5p	0.848	0.001	4155	3.614	88.9%	80.5%
miR-223-3p + miR-142-3p + miR146a-5p	0.865	0.000				

**Figure S3.** ROC analysis for Cox regression models of myocardial work indices and miRNAs (baseline values) as predictors for MACE at follow up in young STEMI patients.**Table S6.** C-statistics, AIC and likelihood ratio test for incremental predictive values of MACE obtained for Model 2 by adding miRNAs.

	<i>P value</i>	<i>Statistic log likelihood ratio</i>	<i>C-statistic</i>	<i>AIC</i>	<i>Likelihood ratio test</i>
Model 2 (age, sex, MW indices)	P<0.0001	30.377	0.945 (0.903-0.987)	45.06	
+ miR-233-3p	P <0.001	35.928	0.9603 (0.919-1.001)	41.47	0.0181
+ miR-142-3p	P<0.001	35.143	0.9504 (0.905-0.995)	41.93	0.0235
+ miR-146a-5p	P<0.0001	42.512	0.977 (0.956-0.999)	34	0.0003

The likelihood ratio test compares the fit of a model with miRNAs to model 1.