

SUPPLEMENTAL MATERIAL

Table S1. Temporal changes of candidate miRNAs in plasma from 9 patients with acute myocardial infarction receiving emergency PCI.

Hours after PCI	Fold change from baseline (fold) *		
	miR-188-5p	miR-30a-5p	miR-30e-5p
Baseline	1	1	1
4h	4.93±1.83	4.67±1.67	4.42±1.57
8h	2.85±1.32	3.31±1.56	3.02±1.68
12h	1.28±0.48	2.68±0.96	1.78±0.65
24h	1.67±0.45	2.22±0.72	1.62±0.45

* Levels of miRNAs are expressed as fold change relative to the patients' corresponding baselines. PCI, percutaneous coronary intervention.

Table S2. Clinical characteristics of enrolled CI-AKI cases and remaining CI-AKI cases.

	Enrolled AKI (n=71)	CI- Remaining CI-AKI (n=64)	<i>p</i> -value
Age (years)	60.82±1.27	64.34±1.29	0.054
Male, n (%)	45 (63.38)	35(54.69)	0.305
Current smoker, n (%)	23 (32.39)	15(23.44)	0.248
HBP, n (%)	44 (61.97)	49(76.56)	0.067
DM, n (%)	21 (29.58)	24(37.50)	0.330
Hyperlipidemia, n (%)	25 (35.21)	24(37.50)	0.782
Prior MI, n (%)	12 (16.90)	6 (9.38)	0.217
Prior PCI, n (%)	20 (28.17)	10 (15.63)	0.099
Systolic pressure (mmHg)	130.24±2.26	133.18±1.48	0.642
Diastolic pressure (mmHg)	77.20±1.15	79.44±1.32	0.738
ACS, n (%)	28 (39.44)	17 (26.56)	0.113
ACEI, n (%)	37 (52.11)	40(62.50)	0.223
Statin, n (%)	64 (90.14)	63(98.43)	0.065
CM volume (mL)	100.99±7.16	93.38±5.13	0.286
CKD stage			

1	56 (78.87)	35(54.68)	0.003
2	13 (18.31)	20(31.25)	0.108
3	2 (2.82)	9(14.06)	0.025
Mehran Score	3.90±0.37	4.77±0.46	0.145
<6	55 (77.46)	40(62.50)	0.057
6-10	14 (19.72)	13(20.31)	0.931
11-16	1 (1.41)	10(15.63)	0.003
>16	1 (1.41)	1(1.56)	1.000
Baseline SCr (mg/dL)	0.72±0.02	0.96±0.16	0.129
Baseline CyC (mg/L)	0.89±0.05	1.21±0.15	0.063
Baseline eGFR (mL/min/1.73m ²)	113.72±3.80	101.26±4.35	0.056

CI-AKI, contrast-induced acute kidney injury; HBP, high blood pressure; DM, diabetes mellitus; MI, myocardial infarction; PCI, percutaneous coronary intervention; ACS, acute coronary syndrome; ACEI, angiotensin-converting-enzyme inhibitor; CM, contrast medium; CKD, chronic kidney disease; SCr, serum creatinine; CyC, Cystatin C.

Table S3. Plasma miRNA levels at baseline detected by RT-qPCR.

	Cq value by RT-qPCR		
	miR-188-5p	miR-30a-5p	miR-30e-5p
Total	33.45±1.55	29.05±1.40	28.64±1.47
CI-AKI	33.60±1.60	29.25±1.59	28.74±1.60
non CI-AKI	33.30±1.49	28.85±1.15	28.54±1.33
DM	32.87±1.82	28.75±1.09	28.46±1.32
non DM	33.68±1.37*	29.18±1.49	28.73±1.52
CKD stage			
1	33.44±1.53	29.04±1.46	28.62±1.53
2	33.73±1.49	29.15±1.23	28.78±1.27
3	31.78±1.55	28.86±0.38	28.34±0.87
Age			
<50	34.34±1.61	29.45±1.41	29.02±1.55
50-70	33.31±1.49†	28.92±1.46	28.61±1.57
>70	33.30±1.52‡	29.24±1.12	28.74±1.20

* P <0.05 vs. DM group. † P <0.05 vs. Age < 50 group. ‡ P <0.05 vs. Age < 50 group.

RT-qPCR, reverse transcription quantitative real-time PCR; CI-AKI, contrast-induced acute kidney injury; DM, diabetes mellitus; CKD, chronic kidney disease; Cq, quantification cycle.

Table S4. The relative change in miRNA levels compared with baseline in subgroups categorized by different CI-AKI criteria.

	SCr(-) & CyC(-)	SCr(+) OR CyC(+)	SCr(+)	CyC(+)	SCr(+) & CyC(+)
N	71	71	17	64	10
miRNA-188- 5p	0.77±0.01	2.36±0.03	2.52±0.44	2.45±0.29	3.16±0.52
miRNA-30a- 5p	0.68±0.01	3.26±0.05	3.51±0.69	3.36±0.48	4.28±0.79
miRNA-30e- 5p	0.74±0.01	3.03±0.04	3.65±0.87	3.13±0.39	4.77±1.24

Levels of miRNAs are expressed as fold change relative to the patients' corresponding baselines.

CI-AKI, contrast-induced acute kidney injury; N, number; SCr(+), meeting the SCr-based CI-AKI criteria: an absolute increase in SCr ≥ 0.3 mg/dL or relative increase in SCr $\geq 25\%$ over baseline; SCr(-), not meeting the SCr-based CI-AKI criteria; CyC(+), meeting the CyC-based CI-AKI criteria: relative increase in CyC $\geq 10\%$ over baseline; CyC(-), not meeting the CyC-based CI-AKI criteria.

Table S5. The association of the change of miRNA levels and CI-AKI by logistic regression analysis.

Variables	miRNA-188-5p		miRNA-30a-5p		miRNA-30e-5p	
	OR (95% CI)	<i>P</i>	OR (95% CI)	<i>P</i>	OR (95% CI)	<i>P</i>
miRNA*	4.238 (2.194-8.185)	<0.001	3.931 (2.153-7.178)	<0.001	4.261 (2.287-7.940)	<0.001
Age, year	0.990 (0.951-1.031)	0.629	0.980 (0.939-1.023)	0.363	0.986 (0.944-1.029)	0.515
eGFR, ml/min/1.73m ²	1.004 (0.988-1.020)	0.615	1.013 (0.997-1.029)	0.117	1.011 (0.995-1.028)	0.166

*, as fold change of miRNA level relative to the patients' corresponding baselines.

CI-AKI, contrast-induced acute kidney injury; OR, odd ratio; CI, confidence interval;

eGFR, estimated glomerular filtration rate.

Table S6. Comparison between the three selected miRNAs in CI-AKI prediction (n=142).

N (%)	miRNA-188-5p	miRNA-30a-5p	miRNA-30e-5p
Consistent:			
31 (21.83%)	+	+	+
83 (58.45%)	-	-	-
Total: 114 (80.28%)			
Inconsistent:			
0 (0.00%)	+	+	-
4 (2.82%)	+	-	+
12 (8.45%)	-	+	+
7 (4.93%)	+	-	-
1 (0.70%)	-	+	-
4 (2.82%)	-	-	+
Total: 28 (19.72%)			

CI-AKI, contrast-induced acute kidney injury; N, number; “+,” meeting the miRNA-based CI-AKI criteria; “-,” not meeting the miRNA-based CI-AKI criteria.

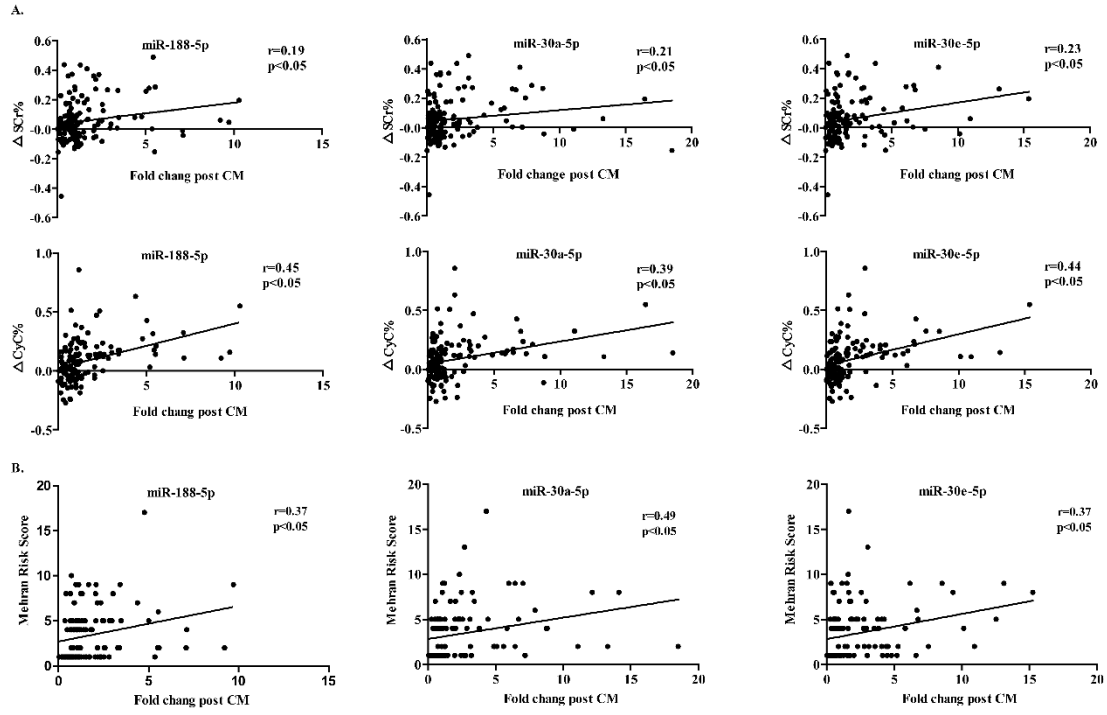


Figure S1.

Supplementary Figure Legends

Figure S1. (A) Correlation analysis of fold change of candidate circulating miRNA levels from baseline with the relative increase in SCr and CyC. **(B)** Correlation analysis of the fold change of candidate circulating miRNA levels with Mehran Risk Scores. r , Pearson correlation coefficient; p , relative computed p-value.