

SUPPLEMENTAL MATERIAL

Table S1. Details of performed sequences for CMR acquisition

CMR sequence parameters	Cine	T2*
Pulse sequence	SSFP	Multiecho gradient
Slice thickness	7 mm	8 mm
Field of view	400 x 300	400 x 324
Matrix size	240 x 240	256 x 154
Slice oversampling	No	No
Voxel size	1.7 x 1.7 x 7 mm	1.6 x 1.6 x 8 mm
Echo time	1.41 ms	Ascending (2.65 to 21 ms)
Repeat time	37.40 ms	800 ms
Flip angle	58°	20°
Bandwidth (Hz/Px)	947	814
Acceleration	GRAPPA (x2) No compressed-sensing	GRAPPA (x2) No compressed-sensing

GRAPPA: Generalized autocalibrating partially parallel acquisition

Table S2. CMR feature tracking LV strain models

LV 3D-GLS	Coeff.	95% CI	p-value
Covariates			
LV 3D-GLS at baseline	0.53	0.39 - 0.67	0.000
Age (years) at baseline	-0.04	-0.10 - 0.01	0.124
Sex	-0.38	-1.64 - 0.89	0.560
1.iron_tx	-0.92	-2.09 - 0.24	0.120
2.visit	-0.00	-0.86 - 0.85	0.995
1.iron_tx#2.visit	-1.38	-2.56 - -0.19	0.023
N	97		
LV 3D-GCS	Coeff.	95% CI	p-value
Covariates			
LV 3D-GCS at baseline	0.81	0.69 - 0.93	0.000
Age (years) at baseline	0.02	-0.02 - 0.06	0.369
Sex	0.44	-0.51 - 1.39	0.364
1.iron_tx	-1.59	-2.51 - -0.68	0.001
2.visit	-0.39	-1.22 - 0.44	0.361
1.iron_tx#2.visit	-0.88	-2.02 - 0.25	0.128
N	100		
LV 3D-GRS	Coeff.	95% CI	p-value
Covariates			
LV 3D-GRS at baseline	0.59	0.42 - 0.77	0.000
Age (years) at baseline	0.02	-0.08 - 0.12	0.728
Sex	-0.89	-3.01 - 1.23	0.410
1.iron_tx	2.14	-0.10 - 4.38	0.061
2.visit	0.63	-1.62 - 2.88	0.584
1.iron_tx#2.visit	2.07	-1.06 - 5.20	0.194
N	97		

LV 3D-GLS: left ventricle 3D-global longitudinal strain; LV 3D-GCS: left ventricle 3D-global circumferential strain; LV 3D-GRS: left ventricle 3D-global radial strain.

Table S3. CMR feature tracking RV strain models

RV 2D-GLS	Coeff.	95% CI	p-value
Covariates			
RV 2D-GLS at baseline	0.76	0.59 - 0.93	0.000
Age (years) at baseline	-0.00	-0.10 - 0.09	0.947
Sex	1.02	-1.01 - 3.05	0.326
1.iron_tx	-1.07	-3.03 - 0.88	0.281
2.visit	0.41	-1.24 - 2.05	0.627
1.iron_tx#2.visit	-2.19	-4.45 - 0.07	0.057
N	97		
RV 2D-GCS	Coeff.	95% CI	p-value
Covariates			
RV 2D-GCS at baseline	0.73	0.58 - 0.88	0.000
Age (years) at baseline	-0.07	-0.14 - 0.01	0.075
Sex	0.45	-1.09 - 1.99	0.568
1.iron_tx	-1.05	-2.47 - 0.36	0.145
2.visit	1.74	-0.02 - 3.50	0.052
1.iron_tx#2.visit	-3.42	-5.86 - -0.98	0.006
N	101		
RV 2D-GRS	Coeff.	95% CI	p-value
Covariates			
RV 2D-GRS at baseline	0.46	0.29 - 0.63	0.000
Age (years) at baseline	0.08	-0.09 - 0.25	0.367
Sex	0.31	-3.39 - 4.01	0.869
1.iron_tx	0.84	-2.68 - 4.37	0.639
2.visit	-1.30	-3.85 - 1.24	0.315
1.iron_tx#2.visit	3.65	0.08 - 7.22	0.045
N	99		

RV 2D-GLS: right ventricle 2D-global longitudinal strain; RV 2D-GCS: right ventricle 2D-global circumferential strain; RV 2D-GRS: right ventricle 2D-global radial strain.

Table S4. Correlations among 30-day changes LV strain parameters and changes in T2*, TSAT, and ferritin.

	$\Delta T2^*$	$\Delta TSAT$	$\Delta Ferritin$
Iron FCM			
ΔLV 3D-GLS	0.30 (p=0.183)	0.06 (p=0.742)	0.04 (p=0.889)
ΔLV 3D-GCS	0.18 (p=0.426)	0.13 (p=0.561)	-0.21 (p=0.339)
ΔLV 3D-GRS	-0.42 (p=0.045)	-0.08 (p=0.751)	0.21 (p=0.330)
Placebo			
ΔLV 3D-GLS	0.22 (p=0.325)	-0.20 (p=0.401)	0.18 (p=0.436)
ΔLV 3D-GCS	-0.14 (p=0.543)	-0.28 (p=0.231)	0.19 (p=0.414)
ΔLV 3D-GRS	0.23 (p=0.330)	0.33 (p=0.155)	0.13 (p=0.573)

FCM: ferric carboxymaltose; LV 3D-GLS: left ventricle 3D-global longitudinal strain; LV 3D-GCS: left ventricle 3D-global circumferential strain; LV 3D-GRS: left ventricle 3D-global radial strain.

The Spearman test evaluated correlations.

Figure S1. Differences in LV and RV strain on CMR-FT at 7 and 30 days following the administration of ferric carboxymaltose in patients with baseline LVEF \leq 40%. Values are presented as the least square means from each mixed linear regression model. All models were adjusted by the participant center (as a cluster variable), the interaction term treatment*visit (7 and 30 days), age, sex, and the baseline (pretreatment) value of the regressed outcome. (A) LV 3D-global longitudinal strain (LV 3D-GLS). (B) LV 3D-global circumferential strain (LV 3D-GCS). (C) LV 3D-global radial strain (LV 3D-GRS). (D) RV 2D-global longitudinal strain (RV 2D-GLS). (E) RV 2D-global circumferential strain (RV 2D-GCS). (F) RV 2D-global radial strain (RV 2D-GRS). CMR-FT: cardiac magnetic resonance feature tracking.

