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Supplementary data

Table S1: Electrophysiology studies describing cardiac abnormalities in Systemic Sclerosis.

Reference	Study population	n	ACR met	% female	Lc/DcSSc	Age, years mean (SD)	Disease duration, years mean (SD)	Procedure	Results
Ciftci [1] 2007	Turkey	60; free of CVD and CV RFs	yes		16 (27%)/ 44 (73%)	46(11) dcSSc, 650(12) lcSSc	7.6 (7) (not defined)	24 hour ambulatory monitor, echo	HRV: SDNN decreased in dcSSc vs. lcSSc/controls (p=0.01), no correlation with disease duration, mRSS, RP.
Draeger [2] 2011	USA	265	or 3 CREST features met	75	NR	48.8 Females, 48.0 males	2.5 (from 1st non RP symptom)	ECG	2.6% sinus tachycardia, 7.2% sinus bradycardia, 5.3% first degree AV block, 7.6% fascicular block, ECG findings not associated with disease type/autoantibody. Survival analysis: over 9 years average follow-up, patients with fascicular block at increased risk of mortality (HR: 2.3; 95% CI:1.1, 4.6, p=0.02), after adjustment for age at enrolment. In the multivariable model, the predictive significance of fascicular blocks for survival was independent of non-SSc related cardiac risk factors (HR: 2.1; 95% CI: 1.02, 4.28, p=0.04).
Follansbee [3] 1985	USA	102; cardiac disease in 19% of dc and 16% of lcSSc	88%	80	49(48)/53(52)	51 (13)	7.6 (8.1) (not defined)	ECG	51% abn. ECG; 14% ST-T wave changes, 8% prolonged PR, 10% left anterior fasicular block, 3% non-significant IV conduction abn, 1% high grade AV block, 10% prolonged QRS: normal ECG associated with normal LV function on echo
Nordin [4] 2014	Sweden	110; 12% IHD, 2% PPM, 5% LVEF<50% 105 controls	yes	81	86 (78)/23 (22)	62 (12)	9.4 (range 5.6-17) (not defined)	ECG, 49 underwent 24 hour ambulatory monitor	28% abn. ECG, (17% controls, p =0.05) 15% AV/IV conduction abn. (5% controls, p<0.01). All with normal ECG had LVEF>50%. ECG abn. not associated with serology, CRP, subtype, organ involvement or disease duration. Ambulatory results: 38% SSc 17% controls abn, p0.05; mainly extra systoles; 2 patients had short SVTs, mean and lowest HR higher in SSc

Kostis [5] 1988	USA	183 Free of CVD	yes	79	45 (25)/104 (57)	49 (13)	NR	ECG, 24 hour ambulatory monitor	43% abn ECG (31% ns ST-T changes, 20% conduction defect). Holter:61% PACs, 21%SVT, 4% long PR interval, 1% each; Wenckebach, bradycardia and CHB, 67% PVCs, 9% >1000PVCs/24hrs, 7% VT. Generalised disease more likely to have SVT, VT and PVCs, and those with abn. ECG, pulmonary involvement, FEV1<70% and loud S2 more likely to have abn. on holter. MVA : cardiac arrhythmias ass. with mortality independent of increasing age, ILD, GORD etc.
Morelli [6]	Italy	77 free of IHD 33 controls	yes	88	35 (45)/42 (55)	50 (13)	10.3 (5) (from RP onset)	ECG, 24 hour holter, echo, SAE, resting myocardial scintigraphy	20.5% had LVP vs. 3% controls (p=0.02). 14/15 SSc pts with LVP had abnormal myocardial scintigraphy vs. 29/58 without LVP (p=0.002). SSc patients with LVP more likely to have abn. myocardial scintigraphy (p=0.002). No association of LVP found with age, sex, disease duration, ILD or complex arrhythmias. LVP more in dcSSc than lcSSc (30% vs. 9% respectively, p=0.04).
Urai [7] 1978	Hungary	193	Pre 1980	87	NR	48	NR	ECG, echo	43 (23%) had IVCD; most frequently left anterior hemi-block (3.4% of 193 patients) 96 followed up over average time of 9.4 years; 30% of patients showed evidence of new IVCD. 47% of those with IVCD developed AV block/other rhythm disturbances Septal hypertrophy more likely in those with IVCD

Abn., abnormal; AV, atrioventricular; CHB, complete heart block; CI, confidence interval; CRP, C-reactive protein; dcSSc, diffuse cutaneous SSc; ECG, electrocardiogram; GORD, gastro-oesophageal reflux disease; HR, Hazard ratio; HRV, heart rate variability; ILD, interstitial lung disease; IV, interventricular; IVCD, IV conduction disturbance; lcSSc, limited cutaneous SSc; LV, left ventricular; LVP, late ventricular potential; mRSS, modified Rodnan skin score; MVA, multi-variate analysis; NR, not reported; PVC, premature ventricular complex; RP, Raynaud's phenomenon; SD, standard deviation; SSc, Systemic Sclerosis; SVT, supraventricular tachycardia; VT, ventricular tachycardia

Table S2: Echocardiography studies describing cardiac abnormalities in Systemic Sclerosis.

Reference	Study population	n	Relevant pt features	% female	Lc/DcSSc %	Age, years, mean (SD)	Disease duration, years, mean (SD)	Results
Aguglia [8] 2001	Italy	124 41 controls	Unselected	85	54/46	52.0 (12.5)	11.2 (8.0) (not defined)	Mean (SD) LVEF 62 (7)% LVSD 7% Mean (SD) E/A ratio 1.1 (0.5) (p=0.05 vs controls) 44.4% inverted E/A ratio PASP > 45mmHg 36%* LVH 32%* Moderate or severe pericardial effusion 5%* Valvular heart disease 4%* *Conditions noted to affect diastolic function; without these conditions including chronic renal insufficiency, arterial hypertension, coronary heart disease; no difference between SSc patients and controls found for BP, LVEF, LV mass and Doppler variables for diastolic dysfunction (including E/A ratio)
Allanore [9] 2009	France	69	No hx of PAH	81	52/48	56.1 (12.6)	8.7 (8.4) (not defined)	Mean (SD) LVEF 65 (6)%, E/A ratio 1(0.3) PAP 24.7 (6.3)mmHg 7% pericardial effusion 19% myocardial involvement (defined as depressed contractility of ventricles or presence of diastolic HF)
Allanore [10] 2010	EUSTAR	7073	Unselected	86	70/30	56 (14)	9.7 (not defined)	LVEF<55%: 5.4%: independently associated with age, male gender, myositis, digital ulcers, lung involvement and absence of previous treatment with calcium channel blockers.
Candell-Reira [11]	Spain	63, 40 controls	Unselected	81	100/0	54 (12)	17 (11) (not defined)	Mean (SD) Mitral E/a ratio 1.02 (0.3), p=0.0013 vs. controls, adjusted for hypertension, heart rate, age, mitral regurgitation, and pericardial effusion. 18% Pericardial effusion 49% MR 30%TR 14% PASP> 40mmHg
De Groote [12] 2008	France	570	No hx of PFT abnormalitie	85	74/26	54 (13)	9 (8)*	Mean (SD) LVEF 65 (8)%, E/A ratio 1.1 (0.4) – all no difference between dc or lcSSc 23% LVH

			s, severe cardiac disease or PAH					18% LV diastolic dysfunction MR: Grade III–IV: 0.4%, II: 6.7%, AR: Grade III–IV: 0%, II: 2.5% Aortic stenosis: 3.3% 3.2% PASP> 40mmHg
Hegedus [13] 1993	Hungary	80 18 age/sex matched controls	74% had lung involvement	90	71/29	50.1 (12.5)	9 (8) (not defined)	Mean (SD) LVEF 45.2 (9.5)% LVEF and stroke volume lower vs. controls, but no differences detected in LVESD or LVEDD between SSc vs. controls 19% LVH Pericardial thickening (>7 mm) was 18%), pericardial effusion 11%
Hinchcliff [14] 2012	USA	153	17 had PAH, 5 IHD	85	60/40	51 (13)	Not given for whole cohort	5.2% had abnormal LVEF (<55%) 5.2% had LVSD 23% diastolic dysfunction During a mean follow-up of 1.9+/-1.3 years, LV diastolic dysfunction independently associated with increased risk of death (HR 3.2, 95% CI 1.1-9.5, p=0.034 per each SD decrease in tissue Doppler E' velocity)
Maione [15] 2005	Italy	77 45 controls	40% known heart involvement	92	25/22	54.4 ± 10.9	18.2 ± 9.2 (from RP onset)	Mean (SD) LVEF 59.6 (6)% 1.3% abnormal LVEF (<55%) 7.9% LVH (p=0.002 vs. controls) 14% pericardial effusion (P<0.001 vs controls) 40% valvular heart disease (p<0.001 vs controls) 37% inverted E/A ratio Mean (SD) E/A ratio 1.08 (0.37) (p<0.001 vs controls)
Meune [16] 2008	France	100 26 controls	Unselected	86	58/42	53.7 ± 13.9	7.9 ± 7.9 (not defined)	15% pericardial effusion, 45% valvular heart disease; (p=ns vs controls for both) Mean (SD) LVEF 64.9 (0.6)%, 7% abnormal LVEF (<55%) (p=ns) 14% LVSD 50% diastolic dysfunction 30% inverted E/A ratio Mean (SD) E/A ratio 1.0 (0.3) (p=0.038 vs controls) 11% had mean PASP>40mmHg (p=ns vs controls)
Minier [17] 2010	Hungary	131	Unselected	90	69/31	55.9 (SD11.7)	8.1 (SD7.2)*	3.1% LVEF≤50% 52% diastolic dysfunction
Morelli [18] 1996	Italy	72 64 controls	No evidence of heart disease	86	40/60		10 (from RP onset)	49% cardiac involvement 22.2 % LVH (p=0.013 vs controls) 5.5% pericardial effusion (p=ns vs controls) 8.3% valvular heart disease (p=ns vs controls)

								Mean (SD) PASP 40.99 (16.37)mmHg (p<0.001 vs controls)
Murata [19] 1998	Japan	95	18 had PAH	91	67/37	NR for whole cohort	NR for whole cohort	31% cardiac involvement 12.6% LVH 7.4% cardiomyopathy 8.4% valvular heart disease
Plazak [20] 2011	Poland	60 30 controls	Unselected	90	55/45	51.8	15.5 (not defined)	63.3% cardiac involvement 3.3% LVH (p=ns vs controls) 13.3% pericardial effusion (p<0.01 vs controls) 11.7% valvular heart disease (p<0.01 vs controls) 3.3% abnormal LVEF (<55%) (p=ns vs controls) 63.3% diastolic dysfunction 63.3% inverted E/A ratio Mean (SD) E/A ratio 0.98 (0.3) (p<0.001 vs controls) 10% had mean PASP>40mmHg (p<0.01 vs controls)
Poormoghim [21]	Iran	58	Unselected	91	60/40	40.9 (13.7)	7.3 (8.5) dcSSc, 8.4 (8.2) lcSSc (from symptom onset)	15.5% pericardial effusion (moderate to severe in 5.1%)
Rosato [22] 2009	Italy	67	free of cardiac symptoms	90	55/45	52 (11)	15 (11) RP duration	6% pericardial effusion Mean (SD) LVEF 58.3 (2.4)% 36% inverted E/A ratio Mean (SD) E/A ratio 1.2 (0.49)
Schade [23] 2012	Brazil	87	Unselected	92	78/22	48.5 (11.7)	NR	4.6% abnormal LVEF
Yiu [24] 2011	Netherlands	104 37 controls	free of IHD 4% PAH	77	51/49	54 (12)	8.6 (6.3) from RP onset	Mean (SD) LVEF 63.5 (7.2)% (p=ns vs controls) 66% diastolic dysfunction (p<0.01 vs controls) Mean (SD) PASP 28.9 (8.7)mmHg (p<0.01 vs controls)

* From first non-RP symptom

AR, aortic regurgitation; BP, blood pressure; CI, confidence intervals; dcSSc, diffuse cutaneous SSc; E/A; early to late filling peak velocity ratio of tricuspid valve; HF, heart failure; HR, Hazard ratio; lcSSc, limited cutaneous SSc; LV, left ventricular; LVEF; left ventricular ejection fraction; LVESD, LV end systolic diameter; LVEDD, LV end diastolic diameter; LVH, LV hypertrophy; LVSD, LV systolic dysfunction; MR, mitral regurgitation; ns, non-significant; PAH, pulmonary hypertension; PAP, pulmonary arterial pressure; PASP, pulmonary arterial systolic pressure; RP, Raynaud's phenomenon; SD, standard deviation; SSc, Systemic Sclerosis; TR, tricuspid regurgitation.

Table S3: Cardiac magnetic resonance imaging studies describing cardiac abnormalities in Systemic Sclerosis.

Reference	Study population	n	Controls, n	ACR met	% female	Lc/DcSSc %	Age, years, mean (SD)	Disease duration, years, mean (SD)	CMR scan	Results
Bezante [25]2007	Italy	50 free of CVD	31 age/sex/BSA matched	Yes	90	66/34	53.3 (12.9)	12.2 (10.2) (from RP onset)	1.5T CMR	Mean LVEF/BSA 36.4% (38.6% in controls, p=0.009) Mean RVEF/BSA 28.1% (24.5% in controls, p<0.0001) RVEF worse in lcSSc vs. dcSSc (p=0.03) E/A lower in SSc (1.2 (0.29)) vs controls (1.35 (0.1))(p0.01)
Carmona-Henryon [26]* 2011	France	46	16	Not stated	NR	NR	NR	NR	DE-CMR	Shorter T1 in septal wall in SSc (345 vs. 360ms in controls, p=0.03). Systolic & early diastolic SR strain rate correlated with T1 (p<0.01)
Gargani [27]* 2012	Italy	53	N/A	Not stated	95	66/34	52 (14)	NR	DE-CMR and TDI echo	Non–ischaemic myocardial fibrosis in 23% Myocardial oedema: in 4% - resolved after steroid Mitral annulus E/E' ratio independent predictor of fibrosis (HR 1.8 (95CI:1.1-3.1)), but no association of fibrosis with disease subtype, duration or age.
Hachulla [28] 2009	France	52	N/A	Yes	85	64/36	56 (11)	6.6 (6.1) (from first non-RP symptom)	1.5T DE-CMR with contrast	Myocardial oedema in 12% Myocardial thinning in 29% Pericardial effusion in 19% Mean RVEF 34%: 21% impaired Mean LVEF 48%: 23% impaired: worse in lcSSc vs. dcSSc (34% vs. 5%, p=0.02) DE abn. in 21%: mainly linear, midwall and rarely subendocardial, and no correlation with coronary artery distribution; worse with increasing disease duration (r=0.30, p<0.05)

Nassenstein [29] 2008	Germany	35 free of IHD	34 age/sex /CV RFs matched	yes	88	43/57	54 (14)	8.4 (7.4) (not defined)	1.5T DE-CMR	Mean LVEF 61.5% (63.3% in controls, p=ns); 21% LVEF<55% 15% abn. DE (3% in controls, p=ns); patchy areas in mid-myocardial layer; 1 patient with sub-endocardial layer involvement; mainly in left basal segment of LV; associated with abn. ECG and valvular pathologies, but not age, disease duration and mRSS. Number of segments with LGE higher in SSc vs. controls (p<0.005) No myocardial oedema seen.
Rodriguez-Reyna* [30] 2011	Mexico	62	N/A	NR	97	53/47	NR	9.7	CMR & stress perfusion	Mean LVEF 59.4% Subendocardic perfusion defects in 79% (correlated with high CRP, p=0.001) DE abn. in 45% (18% patchy, 36% bands, 11% subendocardic, 29% mixed, 7% transmural); worse in dcSSc (58.6 vs. 33.3% lcSSc, p=0.04), mainly in basal anteroseptal and inferoseptal segments. Fibrosis correlated with LVEF (p<0.0009)
Tzelepis [31] 2007	Greece	36 free of IHD or CV RFs	N/A	Yes	89	36/64	NR	Not given	1.5T DE-CMR	DE abn. in 66%; mainly midwall, and linear, sparing subendocardial layer, in basal and mid-cavity segments of LV; greater no. of enhancing segments in RP>15yrs (p=0.017) and those with abn. 24 hr ECG (p=0.035) but no association with disease subtype, PFTS or mRSS.

*Abstract publication

Abn., abnormal; BSA, body/surface index; CI, confidence interval; CMR, cardiac magnetic resonance; CV, cardiovascular; CVD, cardiovascular disease; dcSSc, diffuse cutaneous SSc; DE-CMR, delayed enhancement CMR; E/A; early to late filling peak velocity ratio of tricuspid valve; ECG, electrocardiogram; HR, Hazard ratio; IHD, ischaemic heart disease; lcSSc, limited cutaneous SSc; LGE, late gadolinium enhancement; LV, left ventricular; LVEF; left ventricular ejection fraction; mRSS, modified Rodnan skin score; NR, not reported; PFTs, pulmonary function tests; RFs, risk factors; RVEF, right ventricular ejection fraction; RP, Raynaud's phenomenon; SD, standard deviation; SSc, Systemic Sclerosis

Table S4: Case studies describing the prevalence and nature of cardiac disease across serological subtypes in Systemic Sclerosis.

Reference	Study population	n	1980 ACR/ LeRoy met	Anti-body, n (%)				Female %	Age, years~	Disease duration, years~	Cardiac involvement	
				ANA	ACA	Scl70	Others				Definition	%
Jacobsen [32]	Denmark	230	yes	196 (85)	78 (34)	30 (13)	15 (6.5) Anti-U1 RNP 8 (3.5) Anti-U3 RNP 5 (2.2) Anti-Th RNP	82	59 (46, 86)~~	11 (5, 19)~~ from first SSc related symptom	Clinical or ECG abnormalities in the absences of other causes	ACA: 5 Scl70: 10 Anti-U1 RNP: 0 Anti-U3 RNP: 0 Anti-Th RNP: 0 ANA –ve: 11 P=ns vs. Ab and ANA negative
Denton [33]	UK	1966	yes	1654	618	683	Anti- RNA poly III: 77 Anti-U1 RNP: 102 Anti-U3 RNP: 38	82	54.2 (14.1)	NR	Not defined	ANA: 10.9 ACA: 9.1 Scl70: 12.4 Anti- RNA poly III: 6.4 Anti-U1 RNP: 11.8 Anti-U3 RNP: 13.2 No difference between groups
Ceribelli [34]	Italy	216	yes	NR	67 (31)	81 (38)	Anti-Th/To: 8 (4)	F:M ratio ACA: 66.1 Anti-Th/To 5.3	ACA: 66.6 (10.1) Anti-Th/To 54.5 (17.9)	ACA: 8.7 (5.9) Anti-Th/To 8.5 (6.5) (not defined)	Pericarditis	ACA: 4.5 Anti-Th/To: 25 p=0.028 between groups
de Souza Muller [35]	Brazil	85	y	93	26 (31)	27 (32)	Anti- RNA poly III: 35 (41)	92	ACA: 54.6 (10.5) Scl70: 45.8 (12.5)	ACA: 23 Scl70: 7 Anti- RNA poly III: 10 (not defined)	Palpitations	ACA: 35, Scl70: 15, Anti- RNA poly III: 20, p=0.07 across groups

									Anti- RNA poly III: 47.2 (12.8)		Cardiac conduction blocks Reduced LVEF Diastolic dysfunction	ACA: 24, Scl70: 4, Anti- RNA poly III: 9, p=0.05 across groups ACA: 8, Scl70: 4, Anti- RNA poly III: 12, p=ns across groups ACA: 38, Scl70: 28, Anti- RNA poly III: 33, p=ns across groups
Steen [36]	USA	963	yes		291 (30)	318 (33)	RNA poly III: 120 (12.5) Anti-U1 RNP: 71 (7.4) Anti-U3 RNP: 55 (5.7) PmScl: 36 (3.7) Anti-Th/To: 72 (7.5)	ACA: 92 Scl70: 73 RNA poly III: 81 Anti-U1 RNP: 79 Anti-U3 RNP: 71 PmScl: 81 Anti-Th/To: 81	NR	ACA: 20 Scl70: 16.3 RNA poly III: 11.3 Anti-U1 RNP: 16.5 Anti-U3 RNP: 12.0 PmScl: 14.3 Anti-Th/To: 16.3 (not defined)	Severe heart involvement reported only: cardiomyopathy with decrease in LVEF and symptoms of CCF, symptomatic pericarditis (pericardial pain) or cardiac decompensation from effusion, or arrhythmia attributable to SSc requiring Rx	ACA: 4 Scl70: 16 RNA poly III: 7 Anti-U1 RNP: 11 Anti-U3 RNP: 18 PmScl: 6 Anti-Th/To: 7, p<0.01 by ANOVA for Anti-U3 RNP and Scl70
Rodriguez-Reyna [37]	Mexico	139	84%	139 (100)	41 (30)	39 (28)	RNA poly III: 2 (1) Anti-U1 RNP: 15 (11)	93.5	45 (14.2)	NR	Left sided congestive heart failure (FEVI<45%) or pericarditis on	Anti-Ku 50% vs. 7% if anti-Ku -ve, p=0.04

							PmScl: 12 (9) Anti-Ku: 14 (10)				echocardiogram or CMRI, arrhythmia requiring treatment or conduction defect	Other antibodies not associated
Hesselstrand [38]	Sweden	276	99.6%	232 (84)	51 (19)	26 (9)	Anti-U1 RNP: 59 (21) Anti-RNA poly (I, II, III): 60 (22) Anti-histone: 44 (16)	74	ACA: 48.8 Scl70: 48.8 Anti-U1 RNP: 45.1 Anti-RNA poly (I, II, III): 49.8 Anti-histone: 48.9	NR	Abnormal ECG Cardiomegaly	ACA: 66, Scl70: 48, Anti-U1 RNP: 48 Anti-RNA poly (I, II, III): 66, Anti-histone: 74* ACA: 10, Scl70: 28, Anti-U1 RNP: 17 Anti-RNA poly (I, II, III): 22, Anti-histone: 28 *p<0.05 vs. Ab negative
Picillo [39]	Italy	105	92%	104 (99)	18 (17)	70 (67)	NR	NR	NR	ACA: 17.5 (7.4) Scl70: 11.2 (10.2) from first manifestation	Myocardial ischaemia or necrosis (by ECG or scintigraphy) Conduction defects Arrhythmias	ACA: 11, Scl70: 19 ACA: 17, Scl70: 23 ACA: 0, Scl70: 6 P=ns vs. Ab negative
Kuwana [40]	Japan	275	yes	NR	44 (16)	68 (26)	RNA poly (I, II, III): 14 (5) Anti-U1 RNP: 67 (27) Anti-U3 RNP: 10 (4) Anti-Ku: 7 (3) Anti-Th: 5 (2)	ACA: 100 Scl70: 90 RNA poly (I, II, III): 43 Anti-U1 RNP: 91	ACA: 49 (11) Scl70: 90 (43 (14) RNA poly (I, II, III): 51 (13) Anti-U1 RNP: 38 (11)	ACA: 5.5 (4.4) Scl70: 2.3 (2.7) RNA poly (I, II, III): 0.7 (0.5) Anti-U1 RNP: 3.5 (2.2) Anti-U3 RNP: 2.2 (1.3) Anti-Ku: 1.5 (1.2) Anti-Th: 4.7 (4.8) from diagnosis	Symptomatic pericarditis, clinical evidence of LV congestive heart failure not attributable to any other condition, or conduction defect or arrhythmias requiring treatment	ACA: 2, Scl70: 9, RNA poly (I, II, III): 50,* Anti-U1 RNP: 3, Anti-U3 RNP: 10, Anti-Ku: 0, Anti-Th: 0, *p<0.0001 vs. Ab negative

								Anti-U3 RNP: 90 Anti-Ku: 100 Anti-Th: 80	Anti-U3 RNP: 36 (10) Anti-Ku: 30 (9) Anti-Th: 38 (13)			
Hanke [41]	Germany	280	Not all - DNSS study		NR	67 (24)	NR	F:M ratio 243:37	56 (13.2)	7 (7.38) from diagnosis	2 of the following symptoms: diastolic dysfunction, conduction abnormalities, cardiomyopathy, or reduced LVEF unrelated to other diseases, valvular changes not explained by other, or pericarditis. Abnormal ECG Conduction disturbance	49% vs. 38% Scl70 -ve, p=ns 41% vs. 22% Scl70 -ve, p=0.007 37% vs. 21% Scl70 -ve, p=0.009
Aggarwal [42]	USA	2579	81%	NR	NR	NR	Anti-U3 RNP: 108 (4)	Anti-U3 RNP: +ve: 45.2 (15.6) -ve: 50.2 (14.3)	Anti-U3 RNP: +ve:5.3 (7.6) -ve:7.6 (9.4) from symptom onset	Anti-U3 RNP: +ve: 71 -ve: 81	Any one of: left-sided congestive heart failure (clinical or estimated LVEF< 45%), pericarditis (pericardial pain plus pericardial friction rub, pericardial effusion, or ECG evidence of pericarditis),	23% vs. 20% Anti-U3 RNP negative, p=ns

											arrhythmia requiring treatment, CHB, or CTD-related cardiac cause of death.	

~values indicate mean (SD) unless otherwise stated

~~median (IQR)

Ab, antibody; ACA, anti-centromere antibody; CCF, congestive cardiac failure; CTD, connective tissue disease; dcSSc, ECG, electrocardiogram; LV, left ventricular; LVEF, LV ejection fraction; NR, not reported; ns, non-significant; Scl70, anti-topoisomerase antibody; SD, standard deviation; SSc, Systemic Sclerosis; +ve, positive; -ve, negative.

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