Sub-maximal Exercise Testing in the Prospective Assessment of Interstital Lung Disease (ILD) Secondary to Systemic Sclerosis (SSc): Correlations with Objective and Subjective Measures of Parenchymal Lung Disease.

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Abstract

Introduction:

The 6-minute walk test (6MWT) is an accessible measure of outcome in parenchymal lung disease in SSc. We evaluated correlations of 6MWT with other establised parameters in a well characterized group of patients with ILD secondary to SSc followed prospectively for 12 months.

Methods:

65 patients with SSc-ILD receiving placebo in a multicenter, randomized trial were evaluated at baseline and at 12 months with 6MWT, Borg dyspnea index, FVC, and DLco. Mean age was 54.5 ± 11 and mean disease duration 5.2 ± 6.6 years. 48 subjects (73.8%) were female. 29 (45%) were classified as limited and 36 (55%) as diffuse SSc.

Results (See Table):

Conclusions:

These data confirm the stability of SSc-ILD over 12 months of observation and the high reproducibility of the 6MWT, Borg index, FVC and DLco. Data in the limited SSc sub-group show significant correlations between the 6MWT and DLco at baseline and follow-up as well with the Borg dyspnea index at baseline. The diffuse SSc sub-group shows significant correlations between 6MWT and Borg index and FVC at follow-up but no correlation with DLco. Future interventional studies might address these potentially important differences between SSc subgroups.

Rationale

Introduction:

- 6MWT is a widely and accessible measure of outcome in parenchymal lung disease in SSc.

- Questions about it's utility in patients with SSc are currently arising.

- This abstract is analyzing the correlation between 6MWT and other established parameters of SSc-ILD: FVC, Borg dyspnea scale, DLco.

Methods

Patients and Methods:

- 65 patients enrolled in the placebo arm of a multi-center, randomized trial

- Mean age was 54.5 ± 11 and mean disease duration 5.2 ± 6.6 years

- 48 subjects (73.8%) were female

- 29 (45%) were classified as limited and 36 (55%) as diffuse SSc

Results

	Mean **6MWT** (m)	Mean **Borg**	Mean **FVC** (L)	Mean **DLco** (mmol/kPa.min)
Baseline	408 ± 87	2.7 ± 2	2.6 ± 0.8	10.1 ± 4.7
12 months	406.5 ± 84.2	2.5 ± 2	2.6 ± 0.9	10.2 ± 4.6

Results continued

	Limited SSc at ***Baseline***				Limited SSc at ***12 months***			
	6MWT	**Borg Index**	**FVC**	**DLco**	**6MWT**	**Borg Index**	**FVC**	**DLco**
6MWT-baseline	1	-.441*	.361	.511**	.652**	.044	.319	.511**
Borg-baseline		1	-.273	-.240	-.240	.605**	-.170	-.194
FVC-baseline			1	.425*	.296	-.362	.957**	.383*
DLco-baseline				1	.411**	-.252	.428*	.929**
6MWT-12 months					1	-.328	.346	.451*
Borg-12 months						1	-.340	-.227
FVC-12 months							1	.414*
DLco-12 months								1

	Diffuse SSc at ***Baseline***				Diffuse SSc at ***12 months***			
	6MWT	**Borg Index**	**FVC**	**DLco**	**6MWT**	**Borg Index**	**FVC**	**DLco**
6MWT-baseline	1	-.307	.200	.063	.680**	-.395*	.108	.134
Borg-baseline		1	.073	-.218	-.260	.597**	.121	-.269
FVC-baseline			1	-066	.403*	-.043	.980**	-.084
DLco-baseline				1	.147	-.223	-.063	.958**
6MWT-12 months					1	-.375*	.368*	.207
Borg-12 months						1	.040	-.310
FVC-12 months							1	-.077
DLco-12 months								1

* P≤ .01 (2-tailed), ** P≤ .05 level (2-tailed)

Conclusions

- SSc-ILD is stable at 12 months
- High reproducibility of the 6MWT, Borg index, FVC and DLco
- Data in the limited SSc sub-group show significant correlations between the 6MWT and DLco at baseline and follow-up
- The diffuse SSc sub-group shows significant correlations between 6MWT and Borg index and FVC at follow-up but no correlation with DLco
- Differences between SSc-ILD in limited and diffuse SSc are quite significant