Cardiac Effort in Pulmonary Hypertension-Interstitial Lung Disease: Insights from the ASCENT Trial

Daniel Lachant, DO

Assistant Professor of Medicine
Division of Pulmonary and Critical Care Medicine
University of Rochester Medical Center
Rochester, NY

Disclosure: Received consulting fees from Liquidia

Financial Disclosure

- This study was funded by Liquidia Technologies, Inc.

- I have received consulting fees from Liquidia within the past 24 months

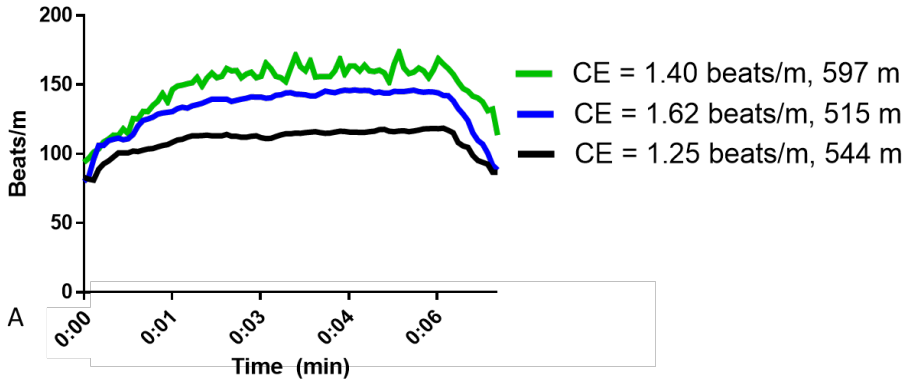
Objective

- To describe Cardiac Effort from the first 20 patients with pulmonary hypertension-interstitial lung disease enrolled in the ASCENT study (Cohort A; NCT06129240) at baseline, 8 weeks, and 16 weeks of treatment with LIQ861, an investigational dry powder inhaler formulation of treprostinil

1. Lachant DJ, et al. *Pulm Circ.* 2020;10(4):2045894020972572.

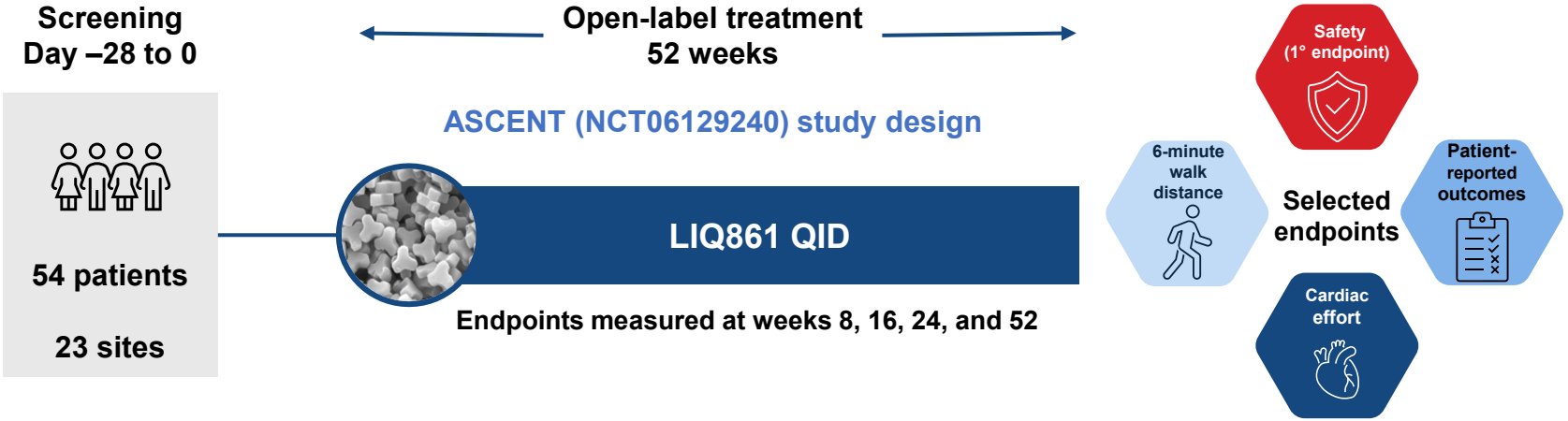
- Cardiac Effort:
  - Physiologic stress
  - Less variability
  - Tracks with improvement.
  - Correlates with Stroke Volume

$$\frac{\text{Number of heartbeats}}{\text{Distance walked}} = \text{Cardiac Effort (beats/meter)}$$



Lachant. Pulm Circ. 2020
Lachant. Pulm Circ. 2024.

Methods



- ASCENT (NCT06129240) is a prospective, multicenter, open-label study evaluating the safety, tolerability, and efficacy of LIQ861 in patients with PH-ILD, including combined pulmonary fibrosis and emphysema
- 20 patients completed baseline visits; 18 walks per protocol at week 8, and 13 at week 16

Baseline Demographics

Naïve PH-ILD	N=20
Age, mean (range), **y**	**74** (53-80)
Sex, Female (%)	**10** (50)
Duration of PH Diagnosis, y	**0.4** ± 0.8
Duration of ILD Diagnosis, y	**4.2** ± 3.7
ILD Subtypes (%)	
IIPs	**12** (60%)
Autoimmune ILDs	**5** (25.0%)
CPFE	**3** (15%)
# Background antifibrotics, n (%)	
Nintedanib	**5** (25%)
Pirfenidone	**3** (15%)

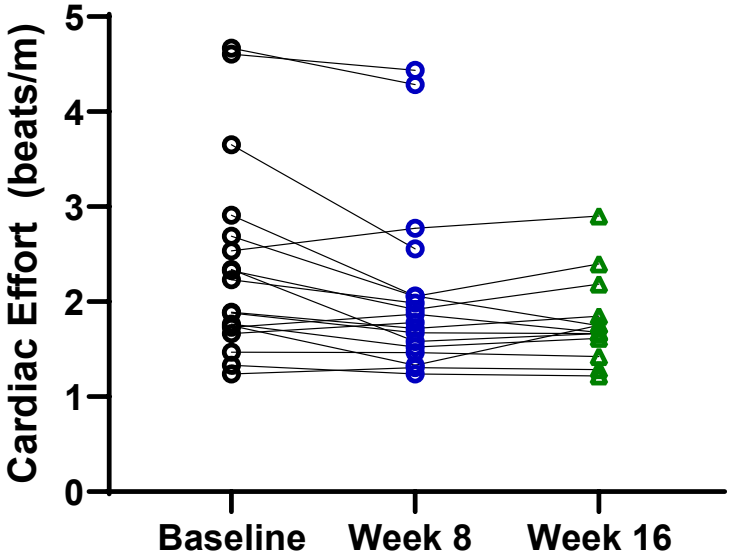
Pulmonary Function Test	Mean ±SD
FVC, L	1.8 ± 0.5
FVC (% predicted)	72.5 ± 22.9
Percent FEV1 predicted	75.6 ± 19.9
DLCO (% predicted)	40.1 ± 16.7

Hemodynamics	Mean ±SD
mPAP (mmHg)	34.2 ± 8.7
PCWP (mmHg)	8.8 ± 3.3
Cardiac Output (L/min)	4.4 ± 1.0
PVR (WU)	6.2 ± 2.4

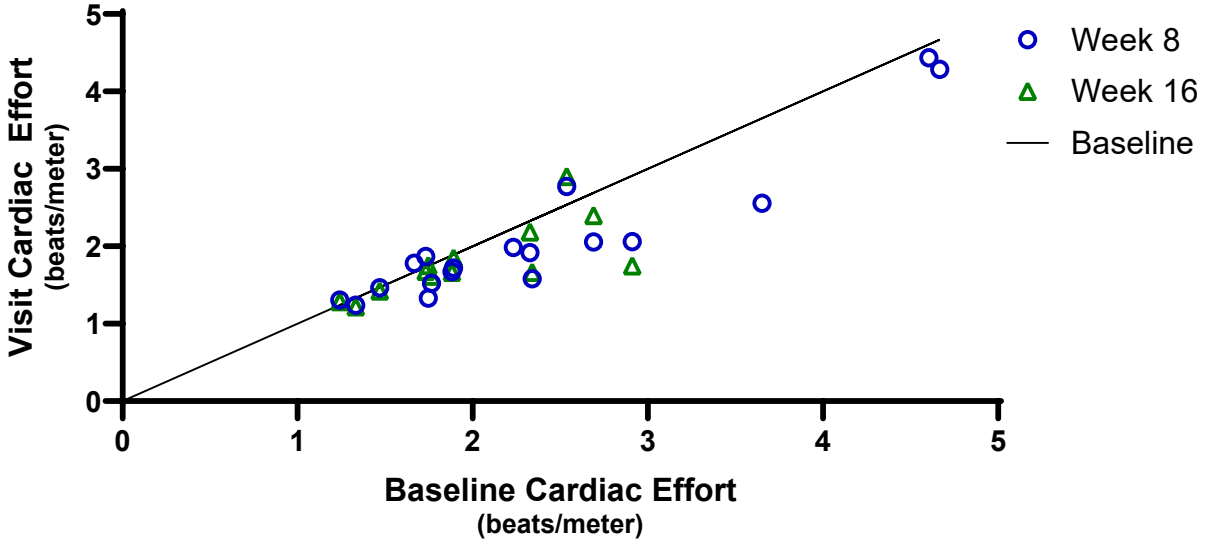
Clinical Characteristic	Mean ±SD
6MWD (Meters), ±SD	**297** ± 100.6
NTPro-BNP (pg/ml)	**578.7** ± 1055.3 [GM=213.1]
Dyspnea-12	**13.0** ± 7.3
EmPHasis-10	**24.2** ± 11.0
Simplified Cough Score	**1.2** ± 0.6

Results: Change in Cardiac Effort in Response to LIQ861 Treatment

- Median dose of LIQ861
  - Week 8 132.5 mcg 4x daily
  - Week 16 159 mcg 4x daily
- Cardiac Effort
  - Week 8, 9/18 subjects >10% reduction.
  - Week 16, 10/13 subjects had a reduction.
- 6 Minute Walk Distance
  - Week 8 + 26 m
  - Week 16 + 24 m



Results: Change in Cardiac Effort in Response to LIQ861 Treatment



- Mean Cardiac Effort reduced by **11.8% at Week 8** and **9.5% at Week 16**
  - Week 8 from 2.4 ± 1.1 beats/m to 2.1 ± 0.9 beats/m (-0.3 ±0.4, n=18)
  - Week 16 from 2.0 ± 0.5 beats/m to 1.8 ± 0.5 beats/m (-0.2 ± 0.4, n=13)

Conclusions

- **Cardiac Effort** detects **early improvement** with **LIQ861** in patients with **PH-ILD**.
- Integrating physiologic monitoring during the 6-minute walk test provides deeper insight into functional limitation and treatment response.
- **Cardiac Effort** may help **identify responders** and **optimize therapy** in PH-ILD and other pulmonary vascular diseases.

CHEST®

Thank You!

Don’t forget to evaluate this session in the app.