

Impact of GERD Treatment on Pulmonary Function in Patients with Interstitial Lung Disease : A Retrospective Analysis

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INTRODUCTION:

Gastroesophageal reflux disease (GERD) is increasingly recognized as a contributing factor in the progression of interstitial lung disease (ILD), likely through chronic microaspiration and airway inflammation.^{1,2} Effective management of GERD may improve or stabilize pulmonary function in ILD patients³. Both medical therapy and surgical interventions, such as hiatal hernia repair with fundoplication, have been proposed strategies to reduce reflux burden. This study assesses changes in pulmonary function following GERD treatment in a cohort of patients with ILD.

METHODS

We retrospectively analyzed 38 patients with ILD and symptomatic GERD who received treatment between February 2021 and July 2024. Patients underwent either surgical hiatal hernia repair with fundoplication (n=33) or medical therapy (n=5). Pulmonary function tests (FVC, % predicted FVC, FEV₁, % predicted FEV₁, DLCO) were compared before treatment and at 6-month follow-up using paired t-tests, and clinical improvement between groups was assessed using Fisher’s exact test.

RESULTS:

38 patients with ILD and GERD were included, of whom 33 underwent surgical hiatal hernia repair, and 5 received medical management. Pulmonary function parameters demonstrated modest improvements following surgical treatment, although changes did not reach statistical significance. However, clinical improvement occurred in 31 of 33 surgically treated patients (94%) compared with 1 of 5 medically managed patients (20%) (p~ 0.001)

Table 1. Patient characteristics

Variable	Surgical (n=33)	Medical (n=5)
Age (years)	58.6 ± 14.2	55.0 ± 13.7
BMI (kg/m²)	27.8 ± 5.0	28.5 ± 2.8
Female	21 (64%)	1 (20%)
Male	12 (36%)	4 (80%)
Never smoker	16 (48%)	2 (40%)
Former smoker	17 (48%)	3 (60%)

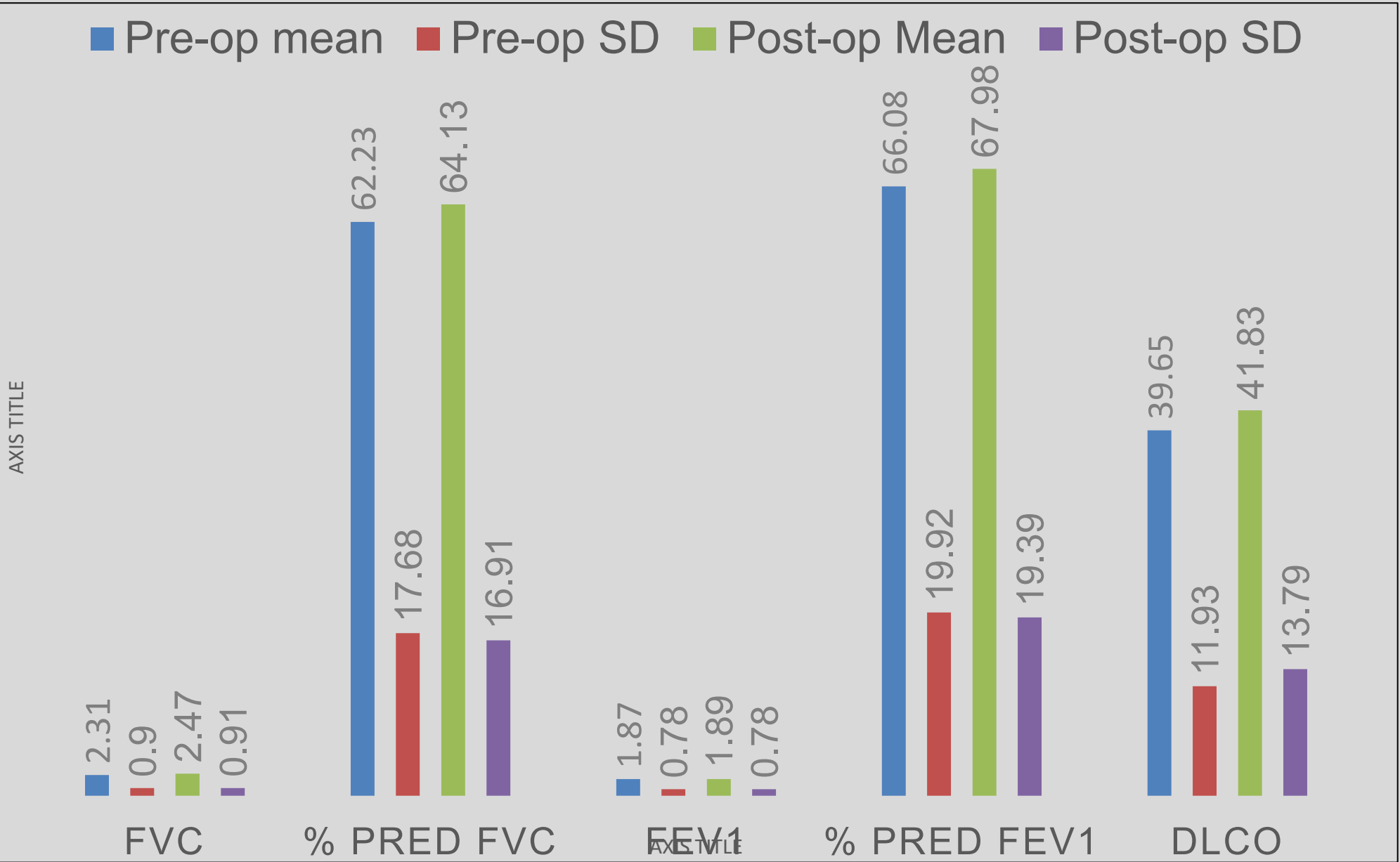
Table 2. Pulmonary function changes after GERD treatment

Parameter	Pre-surgery	Post-surgery	P Value
FVC (L)	2.31 ± 0.90	2.47 ± 0.91	0.45
Predicted FVC (%)	62.23 ± 17.68	64.13 ± 16.91	0.47
FEV ₁ (L)	1.87 ± 0.78	1.89 ± 0.78	0.82
Predicted FEV ₁ (%)	66.08 ± 19.92	67.98 ± 19.39	0.60
DLCO (%)	39.65 ± 11.93	41.83 ± 13.79	0.32

Table 3. Clinical outcomes by treatment strategy

Outcome	Surgical (n=33)	Medical (n=5)
Clinical improvement	31 (94%)	1 (20%)
No improvement / worsened	2 (6%)	4 (80%)

Fig.1 Comparison of PFT parameters



DISCUSSION:

GERD is increasingly recognized as a modifiable contributor to respiratory morbidity in patients with ILD. In our study, although pulmonary function changes were modest, the high rate of clinical improvement among surgically treated patients suggests that reflux control may provide symptomatic and functional benefits. These findings support the hypothesis that microaspiration may contribute to pulmonary disease progression in ILD patients.

CONCLUSION:

In patients with ILD, GERD management with surgical intervention was linked to better clinical outcomes despite only modest improvements in pulmonary function. Surgical reflux control appears to offer benefits beyond standard medical therapy in carefully selected patients and should be explored further in larger, long-term studies.

REFERENCES:

- Joyce S Lee, Jay H Ryu, Brett M Elicker, Carmen P Lydell, et al., Gastroesophageal reflux therapy is associated with longer survival in patients with idiopathic pulmonary fibrosis. PMID: 21700909
- Ganesh Raghu, Steve T-Y Yang, Carolyn Spada, et al., Sole treatment of acid gastroesophageal reflux in idiopathic pulmonary fibrosis: a case series. PMID: 16537884
- Joyce S Lee, Harold R Collard,et al., Anti-acid treatment and disease progression in idiopathic pulmonary fibrosis. PMID: 24429201

Surgical management of GERD in ILD patients demonstrated significantly greater clinical improvement compared with medical therapy and may represent an important therapeutic strategy for this high-risk population.