STRAIGHT-LEG RAISE MANEUVER AS GERD PREDICTOR AMONG LUNG TRANSPLANT CANDIDATES: A SINGLE-CENTER EXPERIENCE

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INTRODUCTION

The straight-leg raise (SLR) test, performed during high-resolution manometry (HRM), is used to assess esophagogastric junction (EGJ) competence by forcing an increase in intra-abdominal pressure (IAP).[1,2] The test aims to identify patients at risk of gastroesophageal reflux disease (GERD).[1,2] We investigated the utility of the SLR in lung transplant (LT) candidates to identify those at risk of GERD.

METHODS

Study design: single-center, retrospective, exploratory study of LT candidates over 18 years old who underwent HRM and 24-hour pH monitoring between April and July 2024.
Exclusions: history of foregut surgery, HH >3 cm, incomplete SLR assessment or test done on acid suppression therapy.
Outcomes: successfully completed SLR maneuver (defined as an IAP increase of at least 50% over the basal IAP) and its diagnostic performance for GERD.
Definitions: *Positive SLR:* peak pressure increase ≥11 mmHg at 5 cm above LES. *GERD:* DeMeester score (DMS) ≥14.73.

RESULTS

37 LT candidates were included (male=24 [64.9%], median age of 64 years [IQR 53-67], and BMI 27.0 kg/m2 [IQR 23.1-28.9]).

The SLR maneuver was successfully completed in 29 cases (78.4%).

18 (62.1%) pathological reflux

8 (44.4%) + SLR | 10 (55.6%) - SLR

Sensitivity of 44.4% (95%CI: 21.5-69.2), **specificity** of 36.4% (95%CI: 10.9-69.2) and **overall accuracy** of 41.4% (95%CI: 23.5-61.1)

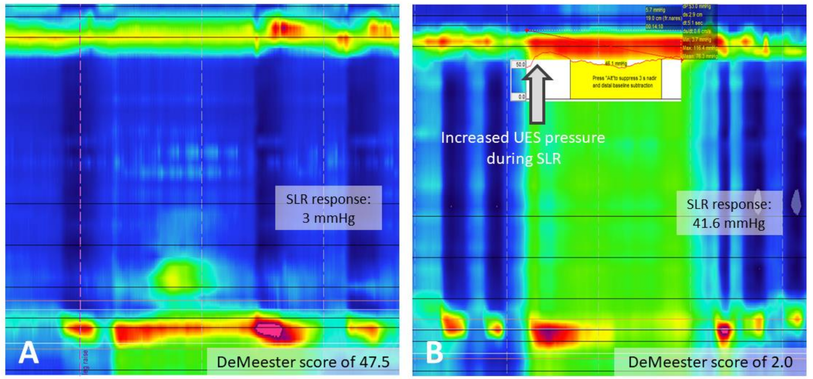


Figure 1. A) Non-predictive straight-leg raise test in a lung transplant candidate with pathological reflux; notably, there was no transient increase in UES pressure. **B)** False-positive straight-leg raise test in a lung transplant candidate with normal distal esophageal acid exposure; there was a transient increase in UES pressure.

Which HRM metrics were correlated with an increased DMS?

Parameter	Magnitude of the relation
LES pressure at rest	(rs= -0.530, p=.003)
EGJ-contractile integral	(rs= -0.387, p=.038)
LES-CD distance (i.e., HH size)	(rs= 0.407, p=.028)

Of note, the Milan score was not correlated with the DMS (rs=.048, p=.805) nor with total acid exposure time (rs=.054, p=.780).

CONCLUSIONS

SLR test is feasible in LT candidates, but not accurate or predictive of GERD.

Further studies needed to assess and refine predictive value of HRM metrics for pathological reflux in LT candidates.

REFERENCES

1. Siboni S, Kristo I, Rogers BD, et al. Improving the Diagnostic Yield of High-Resolution Esophageal Manometry for GERD: The "Straight Leg-Raise" International Study. Clin Gastroenterol Hepatol. 2023;21(7):1761-1770.e1.
2. Siboni S, Sozzi M, et al. The Milan score: A novel manometric tool for a more efficient diagnosis of gastro-esophageal reflux disease. United European Gastroenterol J. 2024;12(5):552-561.

SAGES 2025 Long Beach, CA

Disclosure statement: None of the authors have a financial relationship with a commercial entity that has an interest in the subject of the presented material or other conflicts of interest to disclose.

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