

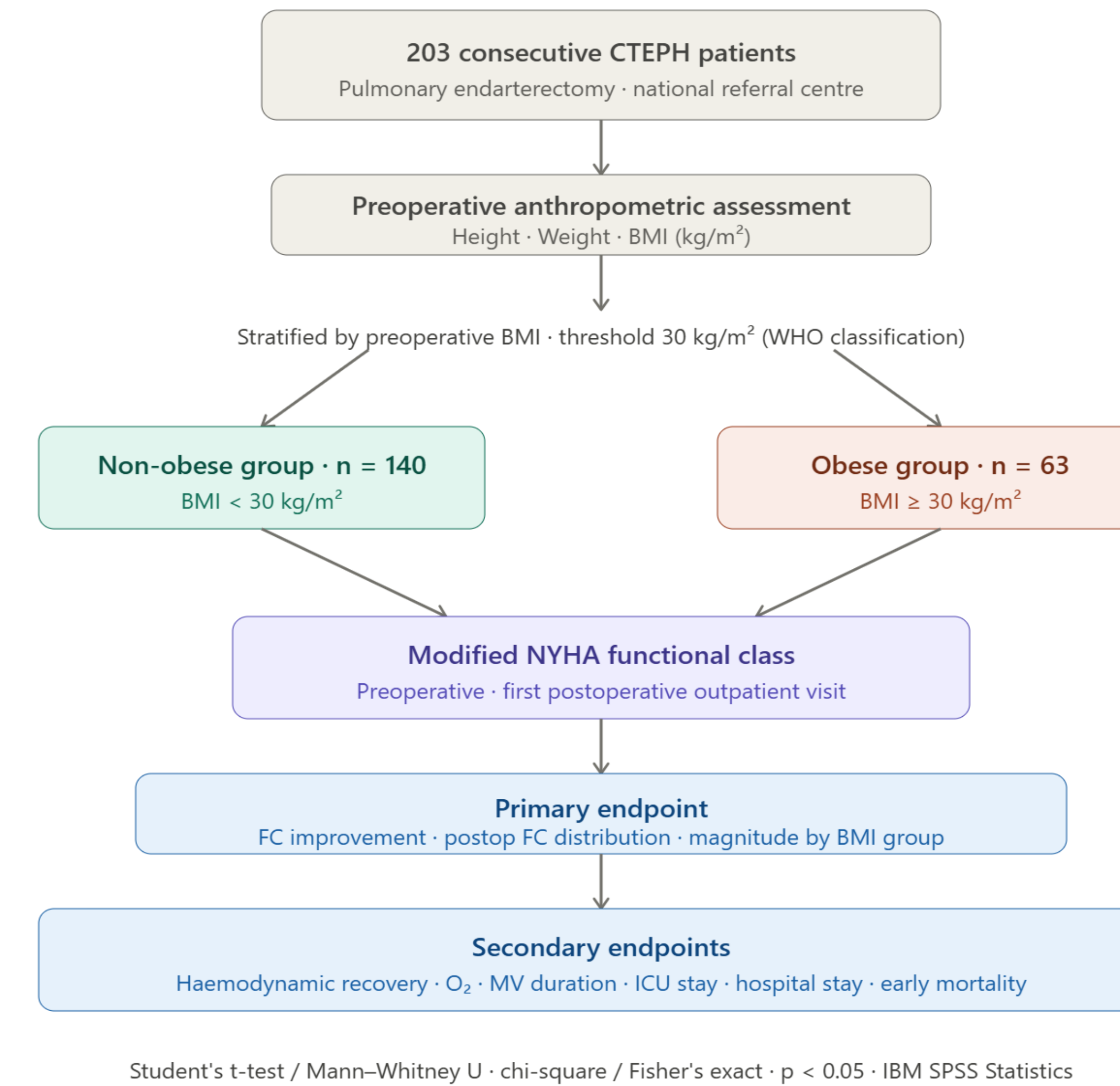
Post-operative performance of obese patients undergoing pulmonary endarterectomy: a functional class-focused analysis from a single-centre Brazilian cohort

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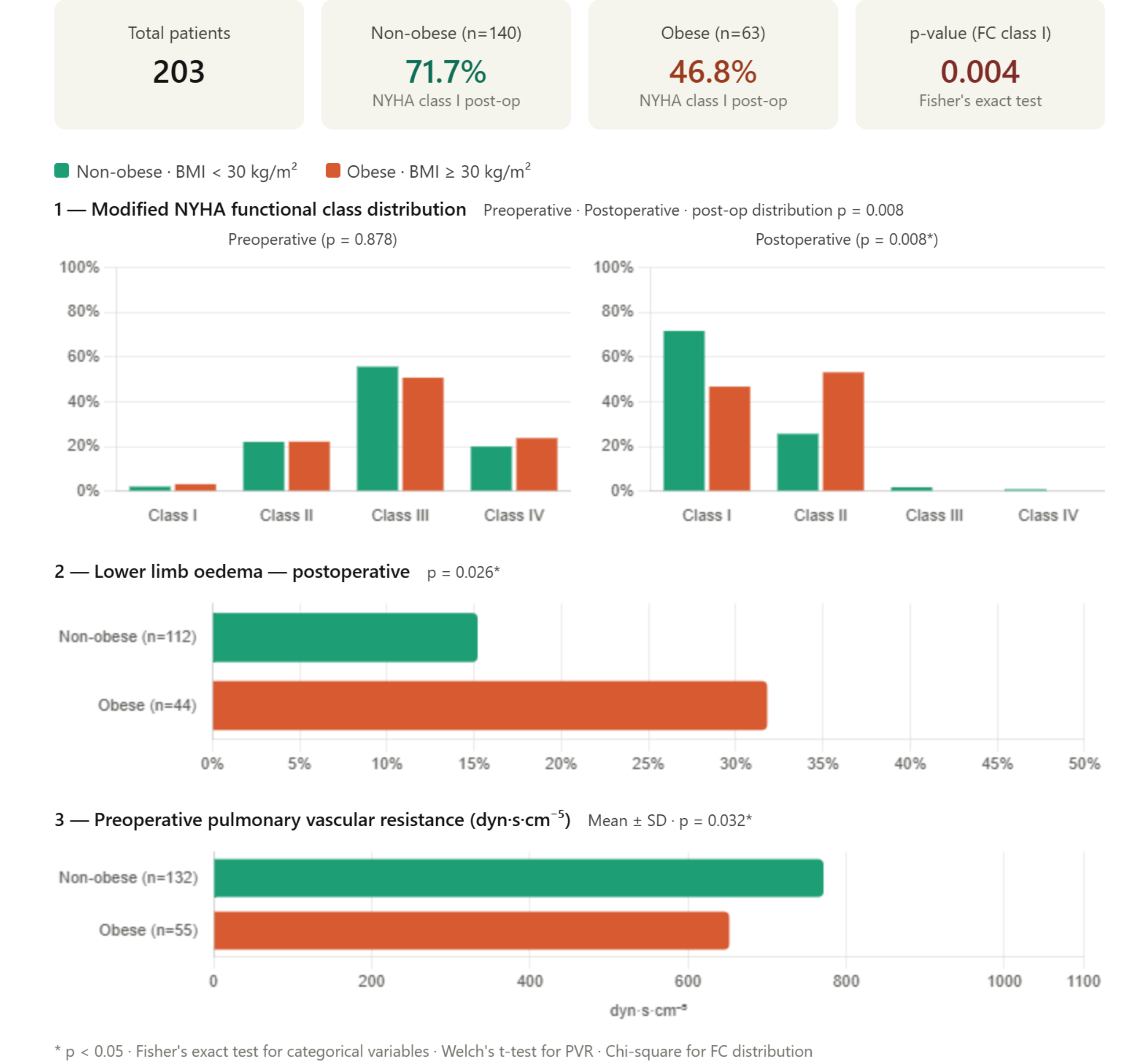
Introduction

- Chronic thromboembolic pulmonary hypertension (CTEPH) is classified as Group 4 pulmonary hypertension according to the current clinical classification of pulmonary hypertension. In contrast to other forms of pulmonary hypertension, CTEPH is potentially curable, and pulmonary endarterectomy (PEA) remains the treatment of choice for surgically accessible disease. Current European Society of Cardiology and European Respiratory Society guidelines assign PEA a Class I recommendation for operable CTEPH, with operability determined through multidisciplinary assessment integrating lesion distribution, haemodynamic severity, and perioperative risk.
- The aim of this study was therefore to evaluate whether obesity, defined by a preoperative BMI of 30 kg/m² or greater, influences postoperative functional outcomes following PEA in a consecutive cohort of patients with CTEPH treated at a national referral centre. The primary endpoint was improvement in modified New York Heart Association (NYHA) functional class following surgery.

Methods



Results



Discussion

- First, obese patients were significantly less likely to achieve NYHA functional class I following PEA, despite comparable preoperative functional class distribution. Second, the rate of postoperative lower limb oedema was significantly higher in the obese group. Third, preoperative pulmonary vascular resistance was significantly lower in obese patients, suggesting a less advanced haemodynamic phenotype at the time of surgical referral — a finding that contextualises, and may partially explain, the observed differences in functional recovery. The difference between groups therefore reflects not a failure of surgery in obese patients, but rather a ceiling effect imposed by the systemic consequences of obesity on residual exercise capacity, dyspnoea, and functional limitation beyond what haemodynamic normalisation alone can reverse. This distinction is of direct clinical relevance. Obesity is independently associated with exertional dyspnoea, reduced functional capacity, and impaired quality of life through mechanisms that are entirely distinct from pulmonary vascular disease.

Conclusions

- Pulmonary endarterectomy should not be considered contraindicated in obese patients, as this population derives significant clinical benefit with improvement in functional class. Nevertheless, during the post-operative period, obese patients should be encouraged to participate in structured programmes focusing on lifestyle modification and weight reduction.
- These findings indicate that PEA is safe and functionally beneficial across a broad BMI range, but that residual functional limitation in obese patients reflects extrapulmonary determinants of exercise capacity that persist beyond haemodynamic normalisation. Targeted preoperative optimisation — including weight management, rehabilitation, and treatment of obesity-related comorbidities — may improve functional outcomes in this subgroup and warrants prospective evaluation.

