

LETTER TO THE EDITOR

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Obesity and postoperative pulmonary complications: other potential factors carrying “weight”

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To the Editor,

A recent study concluded that body mass index (BMI) was not significantly associated with postoperative pulmonary complications (PPCs) in a retrospective evaluation of 231 patients undergoing elective upper abdominal surgery (Shiramoto et al. 2023). The authors notably assessed a pertinent complication in a homogenous surgical cohort, nonetheless their analysis being limited by a rather “slim” cohort of obese when defined by the World Health Organization (WHO) criterion. Herein, we are concerned that the research results could have been influenced by factors other than those discussed in the index article.

Cross-sectional population-based surveys (Vold et al. 2012) exist outlining pivotal links between an increasing BMI and low arterial oxygen saturation (SpO₂). The same becomes especially relevant when researchers delineate almost ten times elevated risk of PPCs following abdominal surgery in background of a preoperative SpO₂ < 94% (adjusted odds ratio; 95% confidence interval: 10.67; 3.79–30.02, *p*-value < 0.001) (Gebeyehu et al. 2022). The fact however remains that Gebeyehu et al. prospectively included 287 elective-emergency abdominal surgical subset with 33% incidence of PPCs when compared to

11.69% patients with PPCs in the Shiramoto et al. retrospective study staged in an elective surgical setting. Having said that, the importance of accounting for respiratory infections within the month prior to surgical intervention cannot be overemphasized while assessing PPCs as an outcome of interest. Indeed, the PPC predictive risk indices, such as the Assess Respiratory Risk in Surgical Patients in Catalonia (ARISCAT score, inculcating preoperative SpO₂ and respiratory infections in the last month, in addition to factors like preoperative anaemia), have demonstrated encouraging results, as depicted in a large external risk-predictive validation endeavor (Mazo et al. 2014).

Furthermore, retrospective surgical literature highlights the concurrent role of nutritional status and perioperative inflammation in determining the propensity to developing PPCs. Thus, amidst independent studies assigning significant PPC “weight” to serum albumin cholesterol, platelets (Xue et al. 2021), and prognostic nutritional index (Yu et al. 2021), the former could also have been potential players, particularly in the context of a predisposed surgical cohort of obese patients.

Abbreviations

ARISCAT	Assess Respiratory Risk in Surgical Patients in Catalonia
BMI	Body mass index
PPC	Postoperative pulmonary complications
SpO ₂	Arterial oxygen saturation
WHO	World Health Organization

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