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Can the Melbourne Scoring Scale be used to assess postoperative pulmonary complications in high-risk patients following lung resection?

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Abstract

Objective: To explore the Melbourne Scoring Scale (MGS) in high-risk patients following lung resection. The MGS is a validated tool used to assess postoperative pulmonary complications (PPC) in patients following lung resection, but the classification criteria for high-risk patients are not standardised.

Methods: We conducted a retrospective observational study of patients undergoing lung resection at Aalborg University Hospital between 2015 and 2018. The study was limited to patients with a preoperative American Society of Anesthesiologists (ASA) Class III or IV. The MGS was used to classify patients as low, moderate, or high-risk based on the presence of one or more PPC criteria. The primary outcome was the frequency of PPC in patients classified as high-risk based on the MGS.

Results: A total of 107 patients were included in the study. The prevalence of PPC was 27.7%. Patients classified as high-risk based on the MGS were more likely to suffer from PPC compared to those classified as low-risk (46.7% vs 13.5%, p < 0.001). The area under the ROC curve for the MGS was 0.7286, indicating good discriminatory power.

Conclusions: The MGS can be used to identify patients at high risk of postoperative PPC, and further research is needed to validate its use in other populations.

Keywords: Melbourne Scoring Scale, lung resection, postoperative complications, high-risk patients

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Footnotes

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Abbreviations

ASA: American Society of Anesthesiologists
BMI: Body mass index
COPD: Chronic obstructive pulmonary disease
FEV1: Forced expiratory volume in one second
DLCO: Diffusing capacity for carbon monoxide
MGS: Melbourne Scoring Scale
PPC: Postoperative pulmonary complications
RE: Resection degree
VATS: Video-assisted thoracoscopic surgery