

Prognostic value of the 1-minute sit-to-stand test on postoperative complications in people with lung cancer elected for lung surgery

Peer-reviewed author version

QUADFLIEG, Kirsten; Higgins, R.; Criel, M.; DAENEN, Marc; RUTTENS, David; THOMEER, Michiel; Maiorana, A.; BURTIN, Chris & Cavalheri, V. (2022) Prognostic value of the 1-minute sit-to-stand test on postoperative complications in people with lung cancer elected for lung surgery. In: EUROPEAN RESPIRATORY JOURNAL, 60 , p. 4585.

DOI: 10.1183/13993003.congress-2022.4585

Handle: <http://hdl.handle.net/1942/39709>

36742

Prognostic value of the 1-minute sit-to-stand test on postoperative complications in people with lung cancer elected for lung surgery

Lung cancer

K. Quadflieg¹, R. Higgins², M. Criel³, M. Daenen³, D. Ruttens⁴, M. Thomeer⁴, A. Maiorana⁵, C. Burtin¹, V. Cavalheri⁶

¹REVAL – Rehabilitation Research Center, BIOMED – Biomedical Research Institute, Faculty of Rehabilitation Sciences, Hasselt University - Diepenbeek (Belgium), ²Physiotherapy Department, Fiona Stanley Fremantle Hospitals Group - Perth (Australia), ³Department Lung diseases, Ziekenhuis Oost-Limburg - Genk (Belgium), ⁴Department Lung diseases, Ziekenhuis Oost-Limburg; Faculty of Medicine and Life Sciences, Hasselt University - Genk (Belgium), ⁵Curtin School of Allied Health and enAble Institute, Faculty of Health Sciences, Curtin University; Allied Health, South Metropolitan Health Service - Perth (Australia), ⁶Curtin School of Allied Health and enAble Institute, Faculty of Health Sciences, Curtin University; Allied Health, South Metropolitan Health Service; Exercise Medicine Research Institute, Edith Cowan University - Perth (Australia)

Background

Preoperative physical function is a predictor of postoperative complications (PCs) in people undergoing lung resection for non-small cell lung cancer (NSCLC). We aim to evaluate whether the preoperative performance in the 1-minute sit-to-stand test (1-MSTST) – a simple test of physical function – is a prognostic marker of PCs.

Methods

We included patients prior to lung resection for NSCLC from two hospitals (Genk, Belgium and Perth, Australia). Before surgery, the 1-MSTST was assessed twice with 15 minutes rest in between, and the best was used for analysis. PCs were prospectively recorded and graded with the Clavien-Dindo classification. Receiver Operating Characteristic (ROC) analysis was performed and the area under the curve (AUC), sensitivity and specificity were calculated. Data of both centres were combined following analysis that demonstrated similar characteristics and findings in both centres.

Results

We recruited 32 participants (20 male; age 66 ± 9 yr) who underwent video-assisted thoracic surgery (78%) or thoracotomy (22%). The median [interquartile range] number of repetitions on the 1-MSTST was 27 [21 to 28]. PCs were reported in 13 participants. Cut-off values of 22 repetitions (AUC 0.65; sensitivity 62%; specificity 79%) and 59% predicted (AUC 0.60; sensitivity 38%; specificity 95%) were identified.

Conclusion

The preoperative assessment of the 1-MSTST has an acceptable discriminative ability to predict the risk of postoperative complications in patients with NSCLC. A cut-off of 22 repetitions or 59% predicted on the 1-MSTST has prognostic value to assess risk of PCs in people undergoing surgery for NSCLC.