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Reviewer Comments

Comment 1: Absence of walking distance prior to thoracic surgery- if the authors have the data it could be interesting to add them in the manuscript allowing to assess patients baseline functional status

Reply 1: Walking distance was not recorded preoperatively because it is not part of our routine preoperative testing and the times to check in to the hospital ward also have varied and thereby lead to lack of preoperative time to do the testing in many of our patients.

Changes in the text: We added information about missing preoperative day walking distance into the manuscript, see page 7 lines 211-212.

Comment 2: Standardized exercises test is six-minute walk test instead of walking distance reported by patients (which may be influenced by many factors, what was noticed by authors themselves)

Reply 2: The reviewer's point is correct. We admit that 6 min walking test is helpful in determining the physical exercise capacity, but the reseach setup was done in close accordance with the standard treatment protocol of our unit in order to avoid additional costs and 6MWD would have required extra personnel to monitor the tests.

Changes in the text: We added more information about reasons behind using patient-reported walking distances in 24 hours instead of 6MWD. See page 12, lines 348-260.

Comment 3: The reviewer does not agree with the sentence: "but it has been noted that six minute walking distance may not be a sensitive indicator for changes in physiology with respiratory physiotherapy (34)" (line 337-338, page 11). The abovementioned study question its usefulness only in patients with cardiac insufficiency: "it appears less reliable to detect changes in clinical status associated with medical therapies for heart failure" (Rasekaba, 2009, doi: 10.1111/ j.1445-5994.2008.01880.x.). There are many studies proving that 6-min walking distance improves after pulmonary rehabilitation (Cheng 2018, doi: 10.1177/0269215518779122, Rick 2014 doi: 10.3978/j.issn.2072-1439.2014.03.16.).

Reply 3: The reviewer raises a good point in estimating the usefulness of 6 min walking test in surgical patients. Meta-analysis and systematic review by Cheng et al reported pulmonary rehabilitation to have significantly enhanced 6MWD by weighted mean difference of 38.38, but the widely accepted minimal important difference (MID) for the 6MWT is 54 metres (95% confidence interval, 37–71 m) (Raseba et al, Redelmeier et al DOI: 10.1164/ajrccm.155.4.9105067). Retrospective cohort study by Rick et al reported 6MWD performed in a fashion that patients were encouraged to walk as fast as possible which differs from ATS protocol (https://doi.org/10.1164/ajrccm.166.1.at1102**)** and makes this result a non-comparable to many other studies. We corrected the text concerning 6MWD.
Changes in the text: See page 14 lines 356-360.

Comment 4: Authors should add cutoff values for pre-operative pulmonary functions tests results based on which patients were divided into normal, mildly, moderately and severely decreased. The small number of patients does not allow to assess post-operative lung function changes in different group of patients regarding pre-operative results however this issue seems interesting knowing the fact that in patients with more reduced lung function and exercise tests results better improvement in these results is noticed following pulmonary rehabilitation.
Reply 4: We thank the reviewer for the observation and information about cutoff values of pre-operative pulmonary functions have been added to footnote for table 1.
Changes in the text: see table 1, page 17-18, lines 493-494.

Comment 5a: Combined with the previous point, in IMT group more reduced pre-operative lung function tests results were observed what may have influenced on better improvement in FEV1 in this group of patients. In table 2 differences between PEP vs. IMT refer to pre-operative values?
Reply 5a: 16 out of 23 PEP group patients and 17 out of 22 IMT group patients had pulmonary function values mildly, moderately or severely decreased. This stands for 70% vs 77%, but the difference was not statistically significant. PEP group had more patients with moderately decreased pulmonary functions and IMT groups had more patients with mildly decreased pulmonary functions. We believe that this difference won't bias the results. Also, the testing with the repeated measures analysis of variance takes into account the differences in the individual patients' series of measurements and compare them consequently to the other patients.
Changes on the text: see page 6, lines 168-172.

Comment 5b: In table 2 differences between PEP vs. IMT refer to pre-operative values?

Reply 5b: Differences in table 2 refer to pre-operative day vs. first postoperative day and first postoperative day vs second postoperative day. F-statistics (and corresponding values of p) refer to the between groups comparisons (PEP vs IMT) at three time points.

Changes in the text: no changes in the text

Comment 6: Another limitation being the consequence of the small number of patients enrolled in the study is analyzing all patients together irrespectively thoracic surgery intervention which certainly could influence on lung function tests results. In PEP group thoracotomy was more frequent than in IMT group- even if there was no statistical significance observed, in such a small number of patients it could truly influence on the results. Indeed the differences in thoracotomy closure techniques may affect pain experiences (Duarte Leandro, 2014, doi: 10.1590/ S1806-37132014000400006)

Reply 6: The authors have paid attention to small number of patients in this study and the possibility of types of thoracic procedures may bias the results. We added to discussion more about these concerns and brought up the difference in number of thoracotomies performed.

Changes in the text: See page 12, lines 342-344.

Comment 7: The reference 17 in line 58 (page 1) does not refer to European Respiratory Society/European Society of Thoracic Surgeons (ERS/ESTS) rehabilitation guidelines

Reply 7: We thank reviewer for the observation. There has been some kind of problem with EndNote citation and citations at lines 59 and 61 are both corrected. We also checked the hole sitation list and discovered another numbering problems with the reference list, and corrected them all.

Changes in the text: see page 3, lines 57-59, 61, 65-66.

Comment 8: In abstract in line 26 (page 1) should be “were” instead of “was” because “Volumetric pulmonary function values and walking distance” are plural

Reply 8: We thank the reviewer for the observation. We have corrected the

misspelling.
Changes on the text: see page 2, line 31.

Comment 9: The authors noticed that absence of longitudinal observation does not allow to assess long-terms influence of physiotherapy on lung function tests results- in the future studies seems interesting to evaluate whether recovery in IMT patients remain more beneficial
Reply 9: We agree with reviewer that it would be interesting to evaluate long term influence of physiotherapy modalities to recovery. We acknowledge this information is lacking now and we hope to encourage further research on this subject.
Changes in the text: no changes in the text.

Comment 10: Table 1 page 19: missing data for tumor excision, wedge resection and pleurectomy (the lack of number of patients), in lung metastasis lack of parenthesis before 30.4% in PEP group
Reply 10: We have checked this and have the data in the Table 1. parenthesis added before percentage of lung metastasis in PEP group. Decimal added to tumor excision percentage in IMT group.
Changes in the text: see table 1, pages 17-18

Comment 11: The reviewer found no information about COPD patients? Were there any enrolled in the study remembering the fact that many patients had positive smoking history? If not, please explain why most of the patients presented decreased lung function tests results?
Reply 11: We thank the reviewer for the accurate notation. COPD as a relevant comorbidity for patients has been noticed, but an in-correct term of chronic emphysema has been used in table 1. We have corrected the term chronic emphysema to COPD in table 1.
Changes in the text: see table 1, page 17

Comment 12: Further to the above, there are no data about bronchodilator treatment that obviously could influence on spirometric results. Please add the data in table 1.
Reply 12: The two patients reported history of asthma and prolonged smoking, but none of the patients regularly used bronchodilatators on corticosteroids on admission or during the study period.
Changes in the text: see page 6, lines 172-173.

Comment 13: Did the authors collect data about respiratory infections and blood saturation levels prior to surgery? If yes, it should be added in table 1- presence of a respiratory infection within 1 month of surgery drastically increase the incidence of PPCs and preoperative SpO2 when breathing room air is the strongest patient related PPC risk factor (Canet, 2010, doi: 10.1097/ALN.0b013e3181fc6e0a.)
Reply 13: The patients in the study did not have acute respiratory infections at time of the procedure, but we don't have information about respiratory infection during the previous month. Information about preoperative SpO2 was added to table 1.
Changes in the text: see table 1, page 17.

Comment 14: In line 136 page 5 meaning of the abbreviation FEV1 used for the first time in the manuscript is missing.
Reply 14: We thank reviewer for the observation.
Changes in the text: see changes in page 5, line 144-145.