

European Respiratory Society Annual Congress 2013

Abstract Number: 805

Publication Number: 201

Abstract Group: 8.1. Thoracic Surgery

Keyword 1: Lung function testing **Keyword 2:** Surgery **Keyword 3:** Exercise

Title: Mode of influence of pulmonary rehabilitation to lung function changes after the lung resection for primary lung cancer

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Body: Objectives: the influence of physiotherapy to the outcome of the lung resection is still controversial. The aim of the study was to assess a contribution of physiotherapy to postoperative lung function and effort tolerance in COPD patients undergoing a lung cancer surgery. Methods: prospective, observational, longitudinal, single-group designed study on 56 consecutive COPD patients who underwent lung resection surgery for primary non small-cell lung cancer (NSCLC). Comparison of the lung function, effort tolerance and symptoms before and after preoperative physiotherapy. Values of the same parameters after physiotherapy were compared with those measured after resection. Results: In patients with tumours requiring a lobectomy, after preoperative physiotherapy, a highly significant increase for FEV1, VC, FEF50 and FEF25 of 20%, 17%, 18% and 16% respectively was registered in relation to baseline values. After physiotherapy, a significant improvement in 6-min walking distance was achieved. After both types of resection, the significant loss of FEV1 and VC occurred, together with significant worsening of the small airways function, of the effort tolerance and symptomatic status. After the lung resection, a clear tendency existed towards smaller FEV1 loss in patients with moderate to severe, when compared with patients with mild lung function impairment. A better FEV1 improvement was associated with more significant loss in FEV1. Conclusion: physiotherapy represents an important part of preoperative and postoperative treatment in COPD patients undergoing a lung resection for lung cancer.