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Title: Lung volume reduction effect after lobectomy in COPD patients

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Body: Objectives: FEV1 is an important factor influencing on operability and life duration of COPD patients. Poor FEV1 is quite often cause for refusal to operate emphysematous patients. Nevertheless recent studies affirmed lobectomy didn't deteriorate FEV1 in some COPD patients. Aim of the study is determination of factors influencing on PFT alteration after lobectomy. Methods: 107 patients underwent lobectomy (53 nonCOPD, 18 – mild COPD, 24 – moderate, 12 - severe) were reassessed 6 – 12 moths postoperatively. There were male/female – 77/30, mean age – 62±2 years. 30 patients underwent right upper, 29 – left upper, 38 – lower and 10 – middle lobectomy. ppoFEV1 was estimated by simple calculating of segments. Results: There was no significant FEV1-loss in moderate to severe COPD patients after lobectomy. Predicted postoperative FEV1 (ppoFEV1) underestimated actual ones (apoFEV1) in these groups.

	FEV1%	ppoFEV1%	apoFEV1%	apo/ppo
nonCOPD (n=53)	95±5	78±4**	80±4**	103%
Mild COPD (n=18)	93±6	72±5**	75±7**	104%
Moderate COPD (n=24)	67±3	55±4**	64±6*	116%*
Severe COPD (n=12)	43±2	34±2**	42±4*	122%*
Right upper lobectomy (n=30)	84±8	71±7**	73±6**	103%
Left upper lobectomy (n=29)	81±9	60±7**	63±7**	105%
Middle lobectomy (n=10)	97±12	88±9	86±9	97%
Lower lobectomy (n=38)	78±8	61±6**	75±7*	123%*

* p<0,05 from ppoFEV1 ** p<0,05 from FEV1

Lower lobectomy led to minimal deterioration FEV1, other types resulted in significant FEV1-loss.

Conclusions: Lobectomy in patients with marked obstruction has lung volume reduction effect, which is maximal after lower lobectomy. FEV1 increased from 57% till 60% postoperatively and was equal 135% of ppoFEV1 in 12 moderate to severe COPD patients underwent lower lobectomy and gave up smoking.