

Integrating Health Status and Survival Data: The Palliative Effect of Lung Volume Reduction Surgery

Roberto Benzo, MD, MSc¹, Max H. Farrell², Chung-Chou H. Chang, PhD^{2,4}, Fernando J. Martinez MD MPH³, Robert Kaplan PhD⁵, John Reilly MD¹¹, Gerard Criner MD⁶, Robert Wise MD⁷, Barry Make MD⁸, James Luketich MD⁹, Alfred P. Fishman, MD¹⁰, Frank C Sciruba, MD¹¹ for the NETT Research Group*.

¹ Division of Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, MN;

² Division of General Internal Medicine, Department of Medicine, School of Medicine, University of Pittsburgh, Pittsburgh, PA; ³ Internal Medicine, Division of Pulmonary & Critical Care Medicine, University of Michigan, Ann Arbor, MI, ⁴ Department of

Biostatistics, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA;

⁵ Department of Health Services, University of California, Los Angeles, CA, ⁶ Division of Pulmonary & Critical Care Medicine, Temple University, Philadelphia, PA, ⁷ Division of Pulmonary & Critical Care Medicine, Johns Hopkins University, Baltimore, MD, ⁸

Division of Pulmonary Sciences, National Jewish Medical Center and Research Center,

Denver, CO. ⁹ Division of Thoracic and Foregut Surgery, University of Pittsburgh,

Pittsburgh PA, ¹⁰ Department of Medicine, University of Pennsylvania, Philadelphia, PA,

¹¹ Division of Pulmonary and Critical Care Medicine, Department of Medicine, School of Medicine, University of Pittsburgh, Pittsburgh, PA

Online Repository

Table E1. Total Score in St. George's Respiratory Questionnaire (SGRQ), Observed and Predicted Over Time

Year	All patients		Non “high risk” patients (NHR)		NHR and Upper-Lobe Emphysema (ULE)		NHR and ULE and Low Exercise		NHR and non-ULE and high Exercise		NHR and non-ULE and low Exercise	
	Med Rx Group	LVRS Group	Med Rx Group	LVRS Group	Med Rx Group	LVRS Group	Med Rx Group	LVRS Group	Med RX Group	LVRS Group	Med Rx Group	LVRS Group
Part A. Scores Observed												
0	53.6	52.5	53.2	52.2	50.8	51.2	57.0	54.3	51.4	48.2	55.5	56.2
1	55.8	41.7	55.1	40.9	53.1	38.4	59.5	40.6	53.4	40.8	56.8	48.3
2	55.9	44.1	55.3	43.6	53.7	41.5	59.0	42.9	53.7	45.6	57.8	48.1
3	55.7	45.8	55.4	45.4	53.8	41.7	58.6	47.6	54.4	45.8	59.3	52.0
4	56.1	45.8	55.5	44.5	52.7	41.6	61.9	43.0	53.8	48.2	80.6	55.1
5	53.7	44.5	53.7	44.5	50.4	42.2	65.3	44.9	54.5	47.4	49.4	54.0
Part B. Scores Predicted by Mixed Models with Random Intercepts and Random Slopes												
0	53.6	51.4	53.2	51.1	50.8	49.9	56.8	53.3	51.3	47.2	55.7	55.3
1	57.2	39.5	56.5	38.5	54.3	36.4	60.8	37.3	54.2	38.8	58.4	45.9
2	57.8	46.1	57.1	45.2	54.8	43.5	59.5	43.9	57.1	47.4	58.6	48.5
3	58.8	51.1	58.2	50.3	56.3	47.0	60.1	51.4	57.4	50.1	60.2	57.5
4	58.8	51.1	58.2	50.3	56.3	47.0	60.1	51.4	57.4	50.1	60.2	57.5
5	58.8	51.1	58.2	50.3	56.3	47.0	60.1	51.4	57.4	50.1	60.2	57.5
Part C. Scores Predicted by Mixed Models with Random Intercepts (No Random Slopes)												
1	53.6	51.4	53.2	51.1	50.8	49.9	56.9	53.3	51.3	47.2	55.7	55.3
2	56.9	39.4	56.3	38.4	54.1	36.3	60.6	37.3	54.1	38.6	58.2	46.0
3	57.6	45.8	57.0	45.0	54.7	43.3	59.5	43.7	56.8	47.4	58.3	48.3
4	58.2	50.3	57.6	49.6	55.9	46.0	59.2	50.8	56.8	49.9	59.8	57.2
5	58.2	50.3	57.6	49.6	55.9	46.0	59.2	50.8	56.8	49.9	59.8	57.2

NHR= patients without “high risk” of perioperative mortality; ULE= predominantly upper-lobe emphysema

Non-ULE= Non-upper-Lobe emphysema; Low exercise= low exercise capacity defined as less than 40w for males and less than 25 W for females in maximal cycle ergometry testing; High exercise= high exercise capacity; Med Rx = medical treatment; LVRS = lung volume reduction surgery.