A non-randomized controlled clinical study on lung-volume-reduction surgery (LVRS) in patients with severe emphysema – On the sensitivity of results and conclusions to the type of missing value treatment

Jochem König,

Institute of Medical Biometry, Epidemiology and Medical Informatics, University of Saarland, Homburg koenig@med-imbei.uni-saarland.de

In order to assess the effect of LVRS, 57 patients with severe emphysema were allocated to surgery or conservative treatment according to their own decision. Lung function was tested at baseline and over 18 months at 3 months intervals and additionally at 4-6 weeks in the LVRS group. Linear mixed model based analysis revealed an immediate effect of LVRS on FEV1 followed by a parallel linear decay in both groups. The time gain from LVRS was estimated as 22 months. It is investigated, how different techniques of coping with missing values contribute to increase or decrease the trustworthiness of these results.

References

- 1. Wilkens H, Demertzis S, König J, Leitmaker CK, Schäfers HJ, Sybrecht GW (2000): Lung Volume Reduction Surgery versus Conservative Treatment in Severe Emphysema. to appear in European Respiratory Journal.
- 2.Geddes D, Davies M, Koyama H, David Hansell D, Ugo Pastorino U, John Pepper J, Penny Agent R, Paul Cullinan P, Stephanie J. MacNeill SJ, Peter Goldstraw P (2000): Effect of lung-volume-reduction surgery in patients with severe emphysema. N Engl J Med 343:239-245
- 3. Verbeke G, Molenberghs G (2000). Linear mixed models for longitudinal data. Springer, N.Y.