





Misinterpretation of time-to-first event curves can lead to inappropriate treatment

Benjamin Hartley¹, Gerard J. Criner², Mark T. Dransfield³, David M.G. Halpin⁴, MeiLan K. Han⁵, C. Elaine Jones⁶, Sally Kilbride⁷, Peter Lange^{8,9}, David A. Lipson ^{10,11}, David A. Lomas¹², Neil Martin^{13,14}, Fernando J. Martinez¹⁵, Dave Singh¹⁶, Robert A. Wise ¹⁷ and Sally Lettis⁷

Affiliations: ¹Statistics and Programming, Veramed Ltd, Twickenham, UK. ²Lewis Katz School of Medicine at Temple University, Philadelphia, PA, USA. ³Division of Pulmonary, Allergy, and Critical Care Medicine, Lung Health Center, University of Alabama at Birmingham, Birmingham, AL, USA. ⁴Dept of Respiratory Medicine, Royal Devon and Exeter Hospital, Exeter, UK. ⁵University of Michigan, Pulmonary and Critical Care, Ann Arbor, MI, USA. ⁶GlaxoSmithKline, Research Triangle Park, NC, USA. ⁷GlaxoSmithKline, Stockley Park West, Uxbridge, UK. ⁸Dept of Public Health, Section of Epidemiology, University of Copenhagen, Copenhagen, Denmark. ⁹Medical Dept, Herlev and Gentofte Hospital, Herlev, Denmark. ¹⁰GlaxoSmithKline, Collegeville, PA, USA. ¹¹Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA. ¹²UCL Respiratory, University College London, London, UK. ¹³GlaxoSmithKline, Brentford, UK. ¹⁴University of Leicester, Leicester, UK. ¹⁵New York-Presbyterian Weill Cornell Medical Center, New York, NY, USA. ¹⁶University of Manchester, Manchester, UK. ¹⁷Division of Pulmonary and Critical Care Medicine, Johns Hopkins University School of Medicine, Baltimore, MD, USA.

Correspondence: Sally Lettis, GlaxoSmithKline, Stockley Park West, Uxbridge, Middlesex, UB11 1BT, UK. E-mail: sally.x.lettis@gsk.com

@ERSpublications

Evaluation of treatment effect durability over time cannot be based on analyses that examine the first of many events. Here, it is explained how misinterpretation of survival curves led to wrong conclusions in a recent *ERJ* editorial. http://bit.ly/2K3amgQ

Cite this article as: Hartley B, Criner GJ, Dransfield MT, *et al.* Misinterpretation of time-to-first event curves can lead to inappropriate treatment. *Eur Respir J* 2019; 54: 1900634 [https://doi.org/10.1183/13993003.00634-2019].

This single-page version can be shared freely online.

To the Editor:

Great care should be taken when assessing the consistency of treatment effect over time based on a survival curve plot, and even more so when a treatment affects a repeating event end-point, such as exacerbations, rather than an event that can occur only once, like death.

Copyright ©ERS 2019