Use of real-world data for cost-effectiveness analysis of treatment sequences: application in rheumatoid arthritis

Janharpreet Singh¹, Matt Stevenson², Kimme L. Hyrich^{3,4}, Clare L. Gillies⁵, Keith R. Abrams⁶, Sylwia Bujkiewicz¹

¹Biostatistics Research Group, Department of Health Sciences, University of Leicester

²School of Health and Related Research, University of Sheffield

³NIHR Manchester Biomedical Research Centre, Manchester University NHS Foundation Trust

⁴Centre for Epidemiology versus Arthritis, University of Manchester

⁵Leicester Real World Evidence Unit, Leicester Diabetes Centre

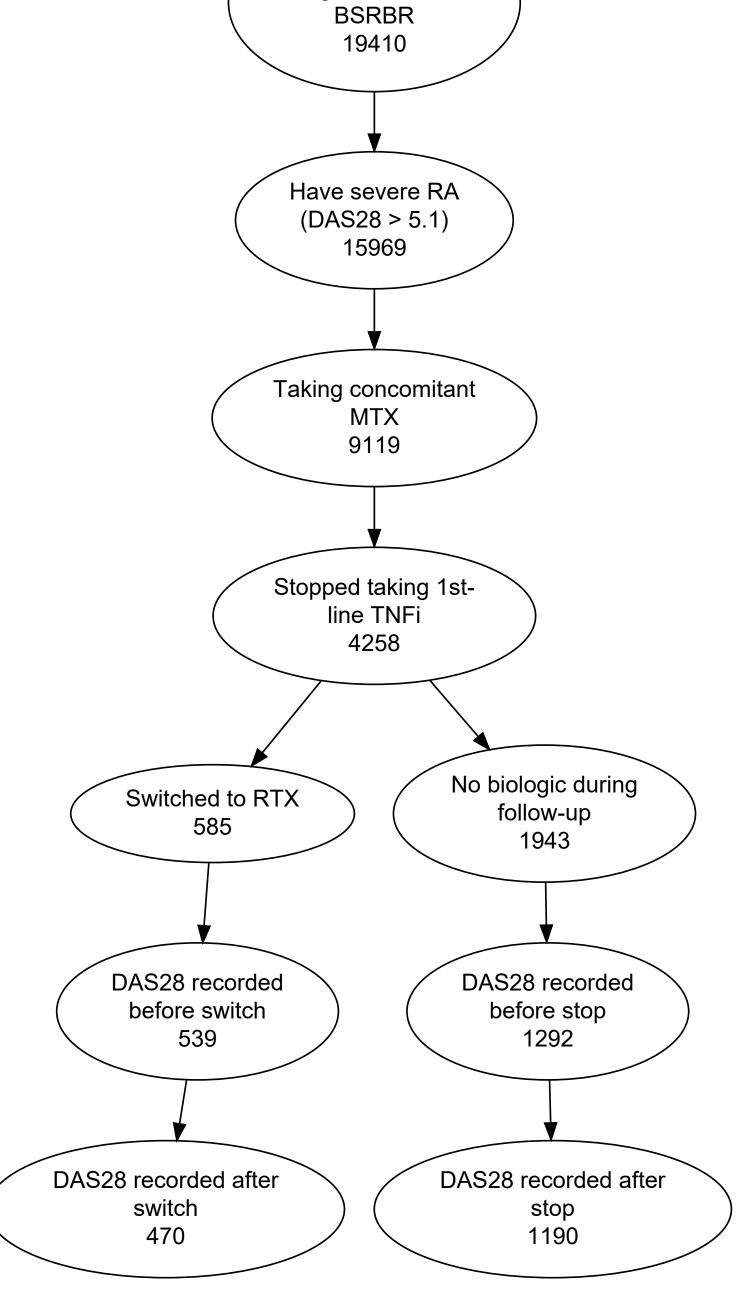
⁶Department of Statistics, University of Warwick



Background

•

Methods



Total RA patients

registered with

Figure 1: Flow diagram illustrating the data extracted from the BSRBR-RA registry on the population defined in the target trial.

Results

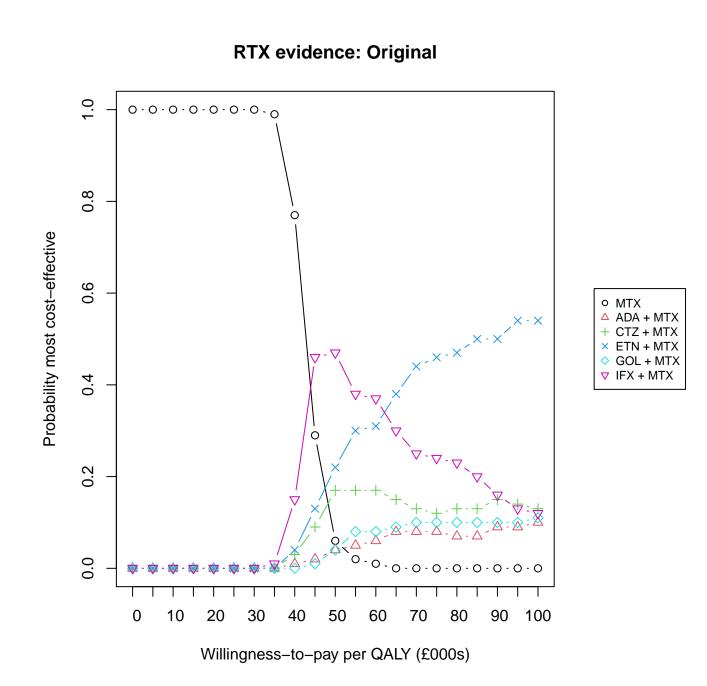


Figure 2: Cost-effectiveness acceptability curve (CEAC) showing the probability of being the most cost-effective strategy at different willingness-to-pay thresholds, corresponding to the RTX effectiveness estimates used in the original analysis.

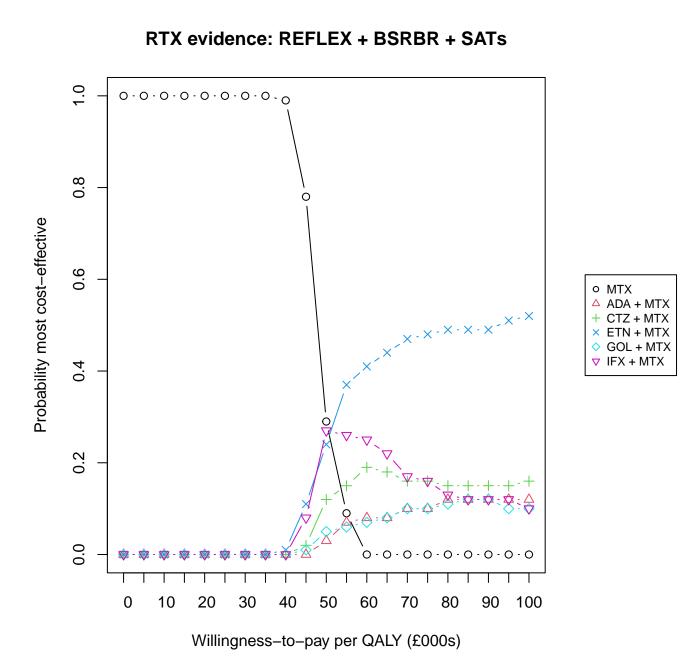


Figure 3: Cost-effectiveness acceptability curve (CEAC) showing the probability of being the most cost-effective strategy at different willingness-to-pay thresholds, corresponding to the RTX effectiveness estimates from combining REFLEX, BSRBR-RA, and SATs data.

Conclusions

References

[1] Stevenson M, Archer R, Tosh J, Simpson E, Everson-Hock E, Stevens J, Hernandez-Alava M, Paisley S, Dickinson K, Scott D, Young A. Adalimumab, etanercept, infliximab, certolizumab pegol, golimumab, tocilizumab and abatacept for the treatment of rheumatoid arthritis not previously treated with disease-modifying antirheumatic drugs and after the failure of conventional disease-modifying antirheumatic drugs only: systematic review and economic evaluation. Health Technology Assessment. 2016;20(35):1-610.

[2] Malottki K, Barton P, Tsourapas A, Uthman AO, Liu Z, Routh K, Connock M, Jobanputra P, Moore D, Fry-Smith A, Chen YF. Adalimumab, etanercept, infliximab, rituximab and abatacept for the treatment of rheumatoid arthritis after the failure of a tumour necrosis factor inhibitor: a systematic review and economic evaluation. NIHR Health Technology Assessment programme: Executive Summaries. 2011.

Acknowledgments

Access to anonymised patient data was provided by the British Society for Rheumatology. JS is funded by the National Institute for Health Research (NIHR) [Doctoral Research Fellowship, award no. NIHR300190].

