Health utility estimates in economic evaluations in axial spondyloarthritis – different methods, different results
Results from the British Society for Rheumatology Biologics Register for Ankylosing Spondylitis (BSRBR-AS)

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BACKGROUND

- In the UK, the EQ-5D questionnaire is the preferred method to assess health benefits (quality adjusted life years) in economic analyses:
  - EQ-5D-3L With 3 response options
  - EQ-5D-5L With 5 response options (from 2009)
- In axial spondyloarthritis (AxSpA), cost-effectiveness models have commonly used proxy measures of health utility, estimated from disease activity or function (Bath Ankylosing Spondylitis Disease Activity, and Functional Indices; BASDAI and BASFI)
- To aid comparability, statistical algorithms have been proposed to convert scores from one scoring method to another, although the validity of these algorithms is not well tested

AIM

- To compare patient self-report EQ-5D health utility values with those that arise from applying published mapping algorithms

METHODS

British Society for Rheumatology Biologics Register for Ankylosing Spondylitis (BSRBR-AS)

- The BSRBR-AS recruits patients with AxSpA, naive to biologic therapy
- Annual postal questionnaires collect information on:
  - Health utility (EQ-5D-5L); and
  - Disease activity and function (BASDAI and BASFI)
- Health utility values were:
  - Derived directly from questionnaire responses based on the EQ-5D-5L value set for England;
  - Estimated from the ‘Crosswalk’ value set which maps EQ-5D-5L data to EQ-5D-3L utility scores; and
  - Computed using two published algorithms3,4 based on patient age, gender, BASDAI and BASFI
- Differences in the mean and distribution of health utility scores were compared between the four different estimation methods
- Data from the BSRBR-AS January 2017 dataset were used

RESULTS

- 1987 participants recruited between Dec-2012 and Nov-2016 completed 4384 questionnaires:
  - Male 71.0%
  - Mean (SD) Age 51.1 yrs (14.5)
  - Mean (SD) BASDAI 4.4 (2.5)
  - Mean (SD) BASFI 4.4 (2.9)
- Figure 1 shows the health utility scores for each method of assessment – all three estimation methods generate lower EQ-5D values than the directly computed method
- The extent to which the different methods are similar to the direct method vary across different levels of disease (Figure 2)

DISCUSSION / CONCLUSIONS

- These data suggest that health utility scores calculated directly differ markedly from those obtained by extrapolating proxy data on disease activity and function
- Where EQ-5D can be measured directly, it is desirable to do so. Elsewhere, careful consideration should be given to how utility values are computed
- Cost-effectiveness estimates of biologic therapies for AxSpA from published studies, and manufacturers’ NICE submissions, have generated estimates ranging from £16,391 to £66,529 per QALY for alternative anti-TNFs, compared with conventional care alone. It is likely that even marginal differences in health utility (and the corresponding over- or under-estimation of treatment benefit) will impact on the results of cost-effectiveness analyses
- Thus, the current findings have important implications, not only for future health economic models, but also historically – both in AxSpA and other rheumatic (and non-rheumatic) diseases

REFERENCES