Interrelationships between health utility measurements, disease activity and psychological factors in Behçet's disease

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Purpose

Behçet's disease (BD) has a profound effect on health-related quality of life (HRQoL) including the psychological wellbeing of patients. We wished to develop a deeper understanding of patients' perception of the personal impact of BD and its influence on their willingness to take risks associated with treatment.

Aims

To measure the direct health utilities Time Trade-Off (TTO) and Standard Gamble (SG) in BD patients and to explore the interrelationships with an indirect measure of health utility EQ-5D-5L, disease activity, depression, anxiety and fatigue.

Methods

TTO, SG, EQ-5D-5L, EQ VAS, depression (PHQ-9), anxiety (GAD-7) and Global Fatigue Index (MAF) questionnaires were administered to adult BD patients who fulfilled the ISG criteria attending the Birmingham Behçet National Centre of Excellence. Disease activity was assessed using the Behçet's Disease Activity Index (BDAI). Statistical analysis was undertaken using SPSS v26.0. The Kruskal-Wallis test was used to evaluate the relationships between HRQoL scores and categorical measurements. Spearman correlation coefficients were calculated for the relationship between HRQoL scores and continuous measurements. Multivariable analysis was used to predict HRQoL scores as the dependent variable based on other variables collected as independent variables. K-means clustering analysis was undertaken creating three cluster centres.

Results

There was a total of 103 patients, 27 (26.2%) males and 76 (73.8%) females with an age range of 17-71 years (mean 43.3 years ± SD 13.97). The commonest ethnicity was White, 82/103 (79.6%). Disease duration was only statistically significantly associated with EQ-5D-5L (p=0.002) and EQ VAS (p=0.000). immunomodulatory medication was not statistically significant associated with any variable.

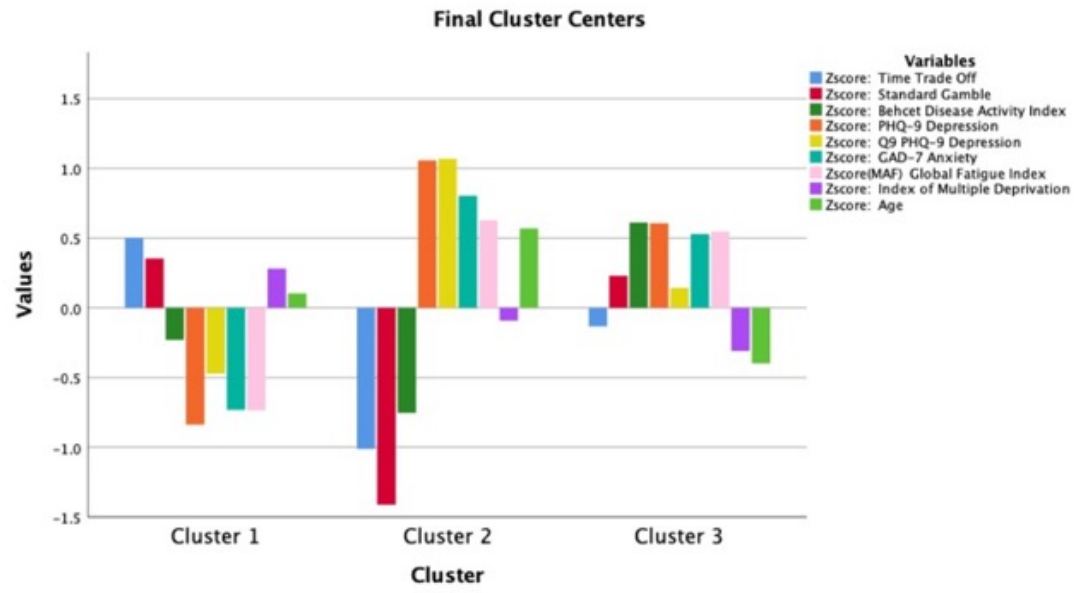
Medication	N (%)
Oral prednisolone only	11 (10.7)
Disease Modifying Antirheumatic Drugs (DMARD)[a] only	8 (7.8)
Biologic/Biosimilar only	5 (4.8)
Prednisolone and DMARD	15 (14.6)
Prednisolone and Biologic/Biosimilar	11 (10.7)
Prednisolone, DMARD and Biologic/Biosimilar	15 (14.6)
DMARD and Biologic/Biosimilar	12 (11.6)
No treatment	26 (25.2)

Immunomodulatory medication in 103 BD patients

Results

Mean TTO was 0.72 ± SD 0.27, mean SG 0.70 ± SD 0.34, and mean EQ-5D-5L 0.519 ± SD 0.315. Moderate to severe depression was identified in 55.2%, moderate to severe anxiety in 35.1% and moderate to high fatigue in 97.7% patients.

TTO correlated with SG ($p < 0.01$), EQ-5D-5L ($p < 0.01$) and negatively correlated with depression ($p < 0.01$), anxiety ($p < 0.01$) and fatigue ($p < 0.01$). Multiple linear regression showed SG was the only predictor of TTO ($p = 0.002$).



Cluster analysis revealed one cluster (cluster 2) with lower TTO and SG scores i.e. worse HRQoL and more likely to trade years or risk immediate death, with worse depression (including 'suicide risk'), anxiety and fatigue scores. Yet these patients had much lower disease activity scores implying that psychological factors rather than their disease activity could play a major influence in determining their TTO and SG scores i.e. HRQoL.

Conclusions

BD patients would on average forgo 28% of their remaining life (TTO) or run a 30% risk of death (SG) to avoid the condition. As complex interrelationships with depression, anxiety and fatigue appear to play an important role in decision making, then TTO and SG may not always be the most appropriate utilities to measure in routine clinical practice. Nevertheless, they could have a role pre- and post- the introduction of a new treatment modality to detect improvement, suggesting applicability to clinical trials.

To achieve this, future work should be directed towards a better understanding of the factors that influence TTO/SG in patients with BD. These include the disease subtype/phenotype and the timing of assessment of TTO/SG in relation to mood and anxiety as they may have important implications in treatment discussions and decision making with patients.