CO149

Does the EQ-5D Measure the Full Impact of Alopecia Areata on Patients' Health Related Quality of Life?

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INTRODUCTION

- The EQ-5D is often used for estimating quality-adjusted life years (QALYs) for supporting cost-effectiveness analysis.
- Many Health Technology Assessment (HTA) bodies state a preference for the EQ-5D as a standard measure of HRQoL for estimating QALYs.[1]
- There has been ongoing discussion regarding whether the EQ-5D misses important areas of health for certain diseases.[2]
- The UK's National Institute for Health and Care Excellence has acknowledged that the EQ-5D may not capture quality-of-life improvements for people with dermatological conditions because important HRQoL concepts are missing.[3, 4]
- Alopecia areata (AA), an autoimmune disease leading to non-scarring hair loss ranging from small bald patches to complete scalp, face and/or body hair loss.[5]
- Significant psychosocial effects on patients with AA stemming from hair loss include impacts on confidence, self-consciousness, self-image, and social relationships, which may not be completely captured by the EQ-5D.[6] These impacts can also be greater for people with more extensive hair loss.[7]
- Understanding the disease's HRQoL impact is crucial in assessing novel treatments for AA but further evidence is required to help inform decision makers on the appropriateness of the EQ-5D for measuring for HRQoL in AA.[8]

OBJECTIVE

- To assess whether the EQ-5D is a sensitive measure of HRQoL in people with AA by comparing scores from sub-groups of people defined by the extensiveness of their hair loss.
- The analyses contrast the performance of EQ-5D against other PRO measures.

METHODS

- Data from participants with AA enrolled in the multinational ALLEGRO-2b/3 trial (NCT03732807) of ritlecitinib were included in the study.
- All study participants had ≥50% scalp hair loss at baseline and were followed up for 48 weeks.
- Participants completed the Alopecia Areata Patient Priority Outcomes (AAPPO) measure, the EQ-5D-5L (or EQ-5D-Y) and Short-form 36 (SF-36) across 48 weeks of follow-up.
- The Severity of Alopecia Tool (SALT) scores (0 [no scalp hair loss] to 100 [complete scalp hair loss]) measured the extent of scalp hair loss, as assessed by a physician.
- Data across all time points and treatment arms were pooled, and HRQoL scores were summarised by SALT score category (SALT 0-10; SALT 11-20; SALT 21-49; SALT 50-74; SALT 75-99; SALT 100; SALT 50-100).
- Cohen's d statistic assessed the degree of difference in HRQoL (as evaluated by each measure) between SALT categories. These were interpreted as a small effect (d=0.20), medium effect (d=0.50), large effect (d=0.80).

Table 1. Measures of health-related quality of life (HRQoL and hair loss)

Measure	Clinical Outcome Assessment / Psychometrically validated in AA?	Description	Score Range
AAPPO	Patient-reported outcome / YES[9,10]	AA-specific measure. 11 items in terms of Hair loss (Scalp, Eyebrows, Eyelashes, Body hair), Emotional Symptoms (Self-consciousness, Embarrassment, Sadness, Frustration) and Activity Limitations (Limited outdoor activity, Limited physical activity, Limited interactions).	0-4; higher scores indicating greater impacts
EQ-5D-5L	Patient-reported outcome / NO	Generic measure assessing mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Each dimension is rated using five response levels (no problems, slight problems, moderate problems, severe problems, extreme problems or unable to perform).	> EQ-5D data were scored using US tariffs[11] > 0 – 1; "0" = dead, 1 = full health. Negative values = "worse than being dead"
EQ-5D-Y	Patient-reported outcome / NO	A similar version of the EQ-5D-5L suitable for measuring HRQoL in 8-15-year-olds, with three response levels (no problems, some problems, a lot of problems).	> EQ-5D data were scored using US tariffs[11] > 0 – 1; "0" = dead, 1 = full health. Negative values = "worse than being dead"
SF-36	Patient-reported outcome / NO	A generic measure assessing HRQoL in eight domains (physical functioning, physical role, pain, general health, vitality, social function, emotional role, mental health) and two summary scores (Physical Component Summary score, Mental Component Summary score).	0-100; higher scores indicate better health
SALT	Clinician-reported outcome / YES	Assesses hair loss by scalp quadrant by assigning a weighted sum of percentage score to each quadrant.	0-100; higher scores indicate more scalp hair loss.

RESULTS

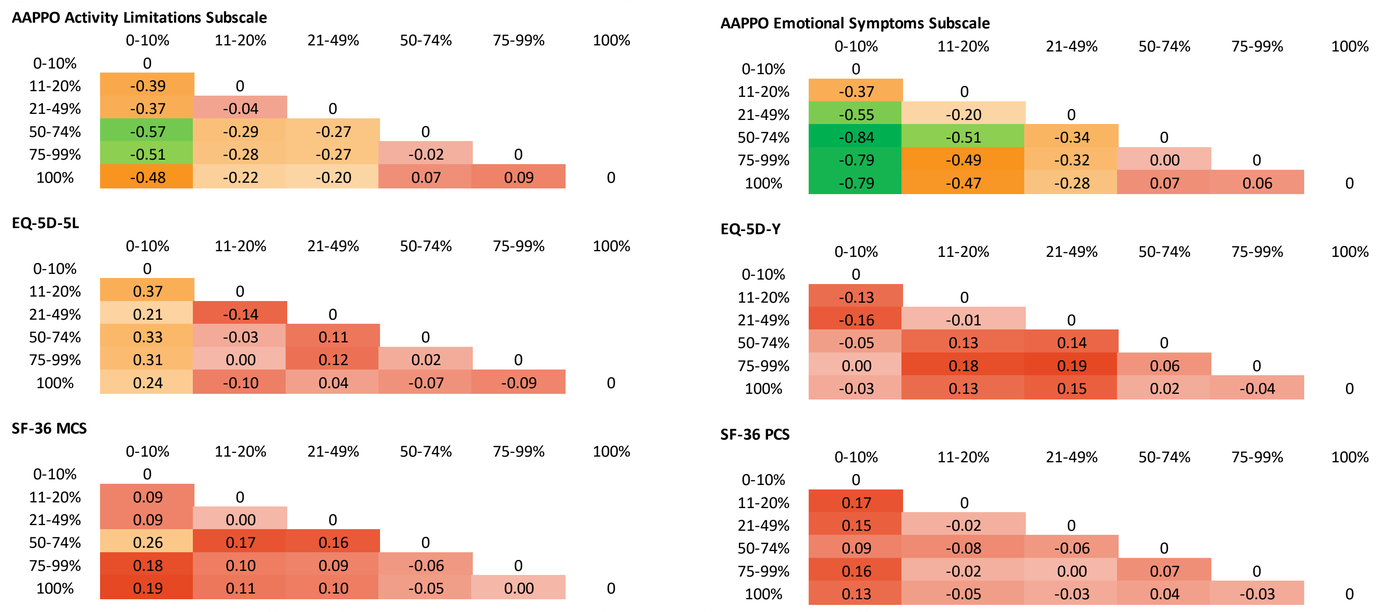
- Data were available from 636 participants at multiple time points from baseline to week 48 (data from Chinese participants were not included due to data privacy regulations passed when this study was initiated)
- Participants included adolescents (12-17 years) and adults:
  - Mean age of total sample: 34.4 ± 14.8 years.
  - 38% (n=243) men
  - 16% (n=99) aged under 18
  - 77% (n=487) white ethnicity
- Analysis of the AAPPO data revealed that Emotional Symptoms (Cohen's d, SALT 0-10 vs. SALT 100 =-0.79) and Activity Limitations scores (Cohen's d, SALT 0-10 vs. SALT 100 =-0.48) were worse for participants with more extensive hair loss.
- Analysis of the EQ-5D-5L and EQ-5D-5Y found only small or very small effect sizes (EQ-5D-5L Cohen's d, SALT 0-10 vs. SALT 100 =0.24; EQ-5D-Y Cohen's d SALT 0-10 vs. SALT 100 =-0.03)
- Analysis of the SF-36 showed very little differentiation between SALT score groups (Physical Component Summary Cohen's d, SALT 0-10 vs. SALT 100 =0.13; Mental Component Summary Cohen's d, SALT 0-10 vs. SALT 100 =0.19).
- Full table results of HRQoL scores by SALT score category for each measure is described in Table 2.
- Figure 1 displays the Cohen's D of HRQoL measures by SALT score (% scalp hair loss).

Table 2. AAPPO, EQ-5D and SF-36 scores among participants (n=636) from ALLEGRO-2b/3 trail by SALT score

Characteristics	SALT 0-10	SALT 11-20	SALT 21-49	SALT 50-74	SALT 75-99	SALT 100	SALT 50-100	Effect size estimates[a] Cohen's d
	Mean (SD)							
AAPPO scores								
Activity limitations (score range: 0 to 4)	**0.1** (0.4)	**0.3** (0.5)	**0.3** (0.6)	**0.5** (0.8)	**0.5** (0.9)	**0.5** (0.8)	**0.5** (0.8)	-0.48
Emotional symptoms (score range: 0 to 4)	**0.6** (0.8)	**0.9** (0.9)	**1.1** (1.0)	**1.5** (1.2)	**1.5** (1.2)	**1.4** (1.1)	**1.5** (1.1)	-0.79
EQ-5D-5L								
	0.947 (0.082)	**0.915** (0.098)	**0.928** (0.098)	**0.917** (0.093)	**0.915** (0.108)	**0.924** (0.096)	**0.919** (0.1)	0.24
EQ-5D-Y								
	0.942 (0.149)	**0.959** (0.082)	**0.960** (0.075)	**0.947** (0.096)	**0.941** (0.105)	**0.945** (0.104)	**0.944** (0.103)	-0.03
SF-36								
Physical component summary (PCS)	**56.1** (5.1)	**55.2** (6.4)	**55.3** (5.8)	**55.6** (5.3)	**55.3** (5.4)	**55.5** (5.0)	**55.4** (5.2)	0.13
Mental component summary (MCS)	**52.4** (8.1)	**51.7** (8.9)	**51.6** (9.2)	**50.1** (9.0)	**50.7** (9.8)	**50.6** (9.4)	**50.6** (9.5)	0.19

[a] Cohen's D effect size comparing SALT 0-10 vs. SALT 100 groups

Figure 1. Effect sizes (Cohen's D) of HRQoL measures by SALT score (% scalp hair loss)[a]



[a]Red cells indicate small effects (d=0-0.19), orange cells indicate small to medium effects (d=0.20-0.49), green cells indicate medium to large effects (d≥0.50); darker shades indicate stronger effect sizes

CONCLUSIONS

- The EQ-5D and SF-36 showed relatively little differentiation between AA patients with a different extent of hair loss.
- In contrast, data from the AAPPO, a condition-specific measure, indicate that patients with the most extensive hair loss experience worse emotional symptoms and activity limitations.
- The limited differentiation observed for the generic measures of HRQoL by SALT scores suggests that they may lack sensitivity to AA severity.
- Generic measures of HRQoL, such as the EQ-5D, may therefore not be adequate for measuring the burden of AA and the treatment-related benefit with hair growth.
- Other approaches for measuring HRQoL should be considered to capture the full HRQoL burden of AA.
- In circumstances where EQ-5D is deemed inappropriate, NICE recommend a hierarchy of alternative approaches, including other generic/condition-specific preference-based measures (if available), valuation of patients' own health via time-trade off interviews, and valuation using vignettes.

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