Presented at ISPOR Europe 2023, November 12-15, 2023 | Copenhagen, Denmark

Acceptance Code: EE411

Cost-per-Responder Analysis of Tralokinumab and Dupilumab in the Treatment of Moderate-to-Severe Atopic Dermatitis

Torres T.[1], Ryttig L.[2], Larsen N.B.[3], Pulleyblank R.[3], Strømkjær L.[3], Carrascosa J.M.[4]

[1]Centro Hospitalar Universitário do Porto, Porto, Portugal, [2]LEO Pharma A/S, Ballerup, Denmark, [3]NHTA ApS, København, Denmark, [4]Hospital Universitari Germans Trias i Pujol, Badalona, Barcelona provincia, Spain

Objectives

- The objective was to estimate the cost-per-responder for the biologic therapies tralokinumab and dupilumab in combination with topical corticosteroids (TCS) as treatments for moderate-to-severe AD based on an indirect comparison of efficacy.

Results

- The EASI-75 NNT was estimated as 2.098 for both tralokinumab and dupilumab, while the IGA 0/1 NNT was estimated as 2.758 for tralokinumab and 3.897 for dupilumab.

Table 1. Model calculations

	Tralokinumab		Dupilumab	
	EASI-75	**IGA 0/1**	**EASI-75**	**IGA 0/1**
Absolute risk reduction	0.477	0.363	0.477	0.257
Number needed to treat	2.098	2.758	2.098	3.897

Abbreviations: EASI-75 = Eczema Area and Severity Index improvement of at least 75%; IGA 0/1 = Investigator's Global Assessment of 1 or 0.

- Based on the EASI-75 response criteria, cost-per-responder estimates ranged from €16,582 to €34,004 (Q4W SA 10%: €16,192 to €33,204; 20%: €15,802 to €32,404; 30%: €15,412 to €31,604) for tralokinumab and from €21,609 to €35,794 for dupilumab.
- Based on the IGA 0/1 response criteria, cost-per-responder estimates ranged from €21,792 to €44,688 (Q4W SA 10%: €21,230 to €43,637; 20%: €20,767 to €42,585; 30%: €20,254 to €41,534) for tralokinumab and from €40,127 to €66,469 for dupilumab.

Figure 1a. Cost-per-responder EASI-75

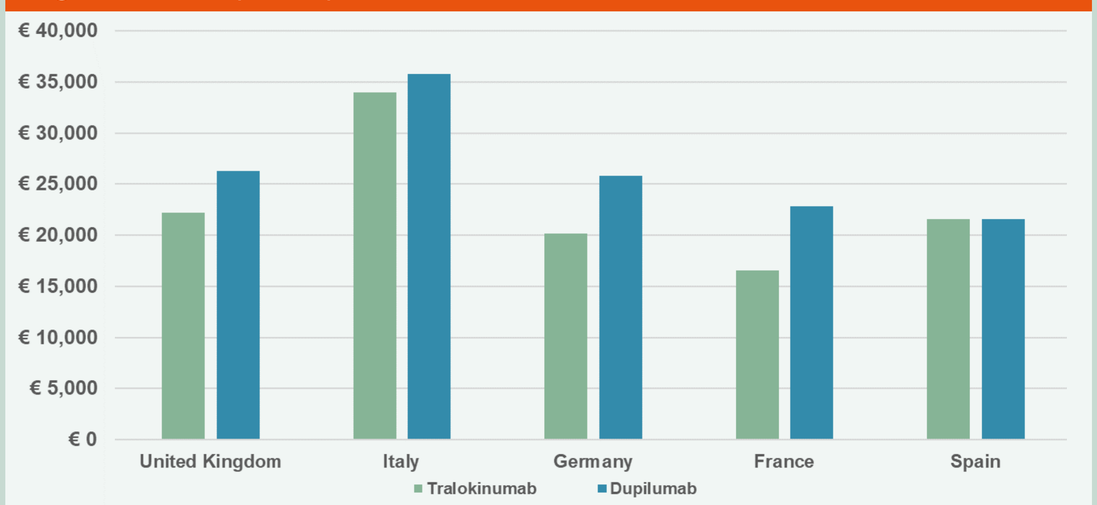


Figure 1b. Cost-per-responder IGA 0/1

Note: Figure 1a: Cost-per-responder estimates considering the EASI-75 response criteria. Figure 1b: Cost-per-responder estimates considering the IGA 0/1 response criteria

Conclusions

- This analysis indicates that using tralokinumab for moderate-to-severe AD patients generally results in lower cost-per-responder estimates compared to dupilumab, considering evidence from an indirect comparison of treatment efficacy and medication costs over a 32-week time horizon.
- In all cases, across all countries, cost-per-responder estimates for tralokinumab were lower or equal to dupilumab.
- The Q4W dosing further increases savings of tralokinumab.

Background

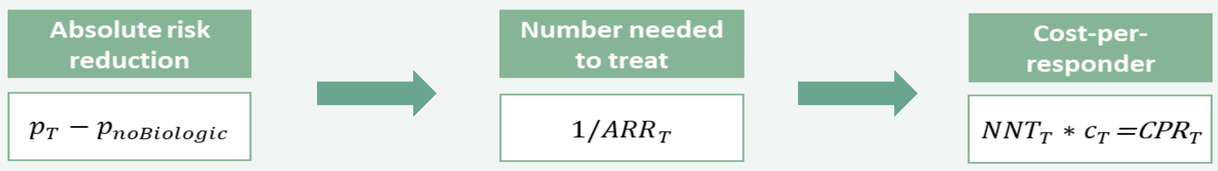
- Clinicians can choose between several systemic treatments for patients with moderate-to-severe atopic dermatitis (AD) who are not adequately controlled with topical therapies, cyclosporine and/or phototherapy.
- These treatments include the biologic therapies tralokinumab and dupilumab. No head-to-head trials have been conducted between these two treatments.

Methods

Study design

- A cost-per-responder model was constructed to estimate the average cost per AD patient who achieved a clinically significant response using a biologic treatment in combination with TCS. The model considered the Eczema Area and Severity Index 75 (EASI-75) and Investigator's Global Assessment (IGA-0/1) response criteria over 32 weeks.
- For each treatment, the cost-per-responder was computed by multiplying the treatment cost by the number needed to treat (NNT).

Figure 2. Model structure



Abbreviations: ARR = Absolute risk reduction; C = Treatment cost; CPR = Cost-per-responder; NoBiologic = Placebo + topical corticosteroids; NNT = Number needed to treat; R= response rate; T = treatment.

Material

- Efficacy data were derived from an unanchored matching-adjusted indirect comparison[1] (MAIC) utilizing patient-level data from ECZTRA 3[2] (tralokinumab) and aggregate data from LIBERTY AD CHRONOS (dupilumab)[3].
- The model included treatment costs based on list prices of the United Kingdom[4], Italy[5], Germany[6], France[7], and Spain[8]. All prices were converted to Euro (€).
- Treatment cost was defined as the drug cost of the biologic treatment with a duration corresponding to 32 weeks. Cost of TCS was not included. Treatment administration every 2 weeks (Q2W) was assumed.
- For tralokinumab, every fourth week (Q4W) dosing may be considered for patients who achieve clear or almost clear skin as per label. Sensitivity analyses (SA) were conducted with Q4W dosing beginning at week 16 for 10%, 20% and 30% of patients treated with tralokinumab.

Table 2. Model cost inputs

	Tralokinumab	Dupilumab
Cost per unit (€)		
United Kingdom	311.50	736.47
Italy	476.64	1,003.44
Germany	282.24	722.88
France	232.43	641.37
Spain	302.89	605.77
Number of units used for 32 weeks		
Q2W dosing	34	17
Q4W dosing from week 16	26	N/a

Note: UK prices were converted to Euro (€). Q2W dosing were applied for all patients in the base case. Q4W was applied in SA.

Abbreviations: Q2W = dosed every two weeks; Q4W = dosed every 4 weeks.

Table 3. Model clinical inputs

	Tralokinumab	Dupilumab	TCS (+ Placebo)
Response rates at 32 weeks			
EASI-75	0.719	0.719	0.242
IGA 0/1	0.499	0.393	0.136

Note: The tralokinumab and dupilumab response rates were based on an unanchored matched-adjusted indirect comparison. TCS (+ placebo) response rates were derived directly from the LIBERTY AD CHRONOS trial. Response rates were used to calculate the absolute risk reduction.

Abbreviations: EASI-75 = Eczema Area and Severity Index improvement of at least 75%; IGA 0/1 = Investigator's Global Assessment 1 or 0; TCS = Topical corticosteroids.

References

1) Torres et al., 2023 - ISAD Hybrid Meeting'23, Gdansk, Poland.
2) Silverberg et al., 2021 - https://doi.org/10.1111/bjd.19573
3) Blauvelt et al., 2017 - https://doi.org/10.1016/S0140-6736(17)31191-1
4) BNF database - NHS indicative price - March 2022
5) AIFA - List of Class H products – Public price – December 2022
6) Lauer-Taxe – Public price – June 2023
7) Base Des Médicaments et Informations Tarifaires – Prix Public TTC – June 2023
8) Secretaria De Estado De Sanidad – Precio publico – July 2023

Disclosures

Funding for this research has been provided by LEO Pharma A/S, Ballerup, Denmark. Torres T. and Carrascosa J.M. were unpaid clinical advisors on this study. Torres T. has received consultancy and/or speaker's honoraria from and/or participated in clinical trials sponsored by AbbVie, Amgen, Almirall, Arena Pharmaceuticals, Biocad, Biogen, Boehringer Ingelheim, Bristol Myers Squibb, Celgene, Fresenius-Kabi, Janssen, LEO Pharma, Eli Lilly, MSD, Mylan, Novartis, Pfizer, Samsung-Bioepis, Sanofi-Genzyme, and Sandoz. Carrascosa J.M. has participated as PI/SI and/or invited speaker and/or advisor for LEO Pharma, Sanofi, Pfizer, Almirall, Lilly, Abbvie, AMGEN, and Galderma; Larsen N.B., Pulleyblank R., and Strømkjær L. are consultants employed at NHTA ApS; Ryttig L. is employee of LEO Pharma.