Cost-per-responder analysis of Tralokinumab versus Dupilumab in Patients with Moderate-to-Severe Atopic Dermatitis in the US and Canada

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Objectives

- Applying an indirect comparison of efficacy, we examined the cost-per-responder of tralokinumab compared to dupilumab, both in combination with topical corticosteroids (TCS) for the treatment of moderate-to-serve AD in the United States (US) and Canada.

Results

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

	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.

United states

- For the US, the average cost per EASI-75 responder for tralokinumab Q2W was $62,714 (Q4W SA 10%: $61,239; 20%: $59,763) versus $63,993 for dupilumab Q2W.
- The average cost per IGA-0/1 responder for tralokinumab Q2W was $82,419 (Q4W SA 10%: $80,480; 20%: $78,450) versus $118,835 for dupilumab Q2W.

Canada

- For Canada, the average cost per EASI-75 responder for tralokinumab Q2W was $22,846 (Q4W SA 10%: $22,308; 20%: $21,771) versus $26,475 for dupilumab Q2W.
- The average cost per IGA-0/1 responder for tralokinumab Q2W was $30,024 (Q4W SA: 10%: $29,317; 20%: $28,611) versus $49,165 for dupilumab Q2W.

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

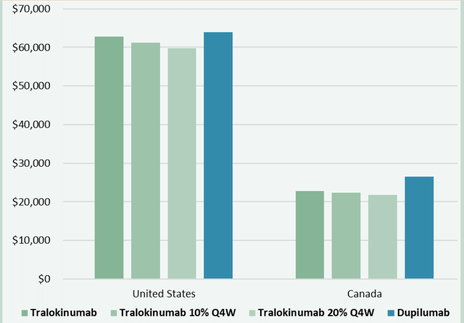
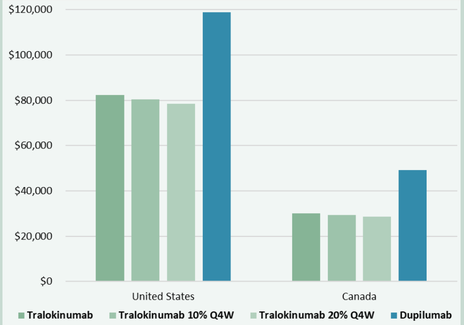


Figure 1b. Cost-per-responder IGA 0/1



1a: Estimated cost-per-responder when considering the EASI-75 response criteria based on the MAIC efficacy data.
1b: Estimated cost-per-responder when considering the IGA 0/1 response criteria based on the MAIC efficacy data.

Conclusions

- This analysis indicates that tralokinumab in combination with TCS is associated with lower costs-per-responder compared with dupilumab in combination with TCS in the treatment of moderate-to-severe AD in the US and Canada when assessing EASI-75 and IGA-0/1 response criteria at 32 weeks.

Background

- Biologic treatments such as tralokinumab and dupilumab are therapeutic options for patients with moderate-to-severe atopic dermatitis (AD) who do not achieve adequate control with topical treatments or phototherapy.
- To date, no trials have been conducted to directly evaluate the relative efficacy of these biologic treatments.

Methods

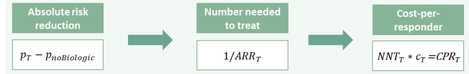
Study design

- A cost-per-responder analysis was undertaken considering 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).
- The model structure is presented in Figure 2.

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].
- 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. Treatments were assumed to be administered every 2 weeks (Q2W).
- The costs were estimated based on Wholesale Acquisition Costs (WAC) from the US[4] and ex-factory prices via the McKesson price list for Canada[5]. All prices were converted to US dollars ($).
- Sensitivity analyses (SA) were conducted with every 4 week (Q4W) dosing beginning at week 16 for 10% and 20% of patients treated with tralokinumab.

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.

Table 2. Model cost inputs

	Tralokinumab	Dupilumab
Unit cost		
Unites states	$879.06	$1,793.96
Canada	$320.23	$742.21
Number of units used for 32 weeks		
Q2W dosing	34	17
Q4W dosing from week 16	26	N/a

Note: Canadian prices were converted to US dollars ($). Q2W dosing were applied for all patients in the base case. Q4W was only applied in sensitivity analysis.

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 ECZTRA-3 trial. Response rates were used to calculate the absolute risk reduction.

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

References

1) Torres et al., 2023 - ISAD Hybrid Meeting'23, Gdansk, Poland.
2) Silverberg et al., 2021 - https://doi.org/10.1111/bjd.19573
2) Blauvet et al., 2017 - https://doi.org/10.1016/S0140-6736(17)31191-1
4) Medi-Span Price Rx – WAC. 2023
5) McKesson price list (Ontario) – Ex Factory. 2023

Disclosures

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