COST COMPARISON OF SYMPTOM TREATMENT IN ATOPIC DERMATITIS USING UPADACITINIB AND DUPILUMAB IN POLAND

ACCEPTANCE CODE:
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S. STRACHOTA[1], P. KSIĄŻEK[1], K. DZIADEK[1] and C. PRUSZKO[1]
[1]MAHTA Sp. z o.o., Warsaw, Poland

INTRODUCTION

Atopic dermatitis (AD), also known as atopic eczema, is a chronic inflammatory skin disease characterized by intense itching, skin dryness and erythematous rash[1,2]. AD is influenced by a combination of genetic and environmental factors, and ranks among the most widespread chronic inflammatory skin disorders globally, with a prevalence ranging from 20–30% in children and 2–10% in adults, depending on the geographic region[1].

The treatment of severe atopic dermatitis, defined as an Eczema Area and Severity Index (EASI) score ≥20, has been reimbursed in Poland under the so-called Drug Program B.124 since November 2021[3]. Dupilumab (DUPI) was the first therapy financed under this program. Over time, other drugs were added, and the age ranges for which individual therapies could be used were also expanded. Upadacitinib (UPA), a Janus kinase inhibitor, was approved for reimbursement for the treatment of severe AD in November 2022 and is currently available to patients aged 12 years and older[3].

OBJECTIVE

Although dupilumab has become the most commonly used therapy for severe AD in Poland (over 70% of approximately 2,000 patients in the Drug Program B.124 received at least one dose of DUPI in 2024)[4], achieving satisfactory treatment outcomes remains challenging. Randomized clinical trials have shown that UPA is significantly more effective than DUPI in achieving key endpoints associated with the complete clearance of skin lesions[5]. This analysis aims to compare the costs of achieving symptom resolution in AD using upadacitinib versus dupilumab in Poland, based on efficacy data from the Level Up study, and to evaluate the potential cost savings for the public payer.

METHOD

The target population includes adolescents (aged 12–17 years) and adults with severe AD and is consistent with the current reimbursement indication for upadacitinib. The only cost category considered in the analysis was drug costs, sourced from public hospital tenders[6]. Dosages of UPA and DUPI were based on the relevant Summaries of Product Characteristics (SmPCs)[7,8], while the proportions of patients receiving each dose were derived from demographic data[4,9,10]. A summary of the 16-week therapy costs included in the analysis is presented in Table 1.

Efficacy data was derived from the Level Up study at week 16[5], which also represents the decision point for the continuation of therapy in the Drug Program B.124 in Polish clinical practice[3]. The endpoints analyzed included achievement of at least a 90% or 100% reduction in EASI (EASI 90/EASI 100), a ≥4-point improvement in the Worst Pruritus Numerical Rating Scale (WP-NRS), or a WP-NRS score of 0 or 1 at week 16 (Table 2). EASI 100, indicating complete clearance of skin lesions, was selected as the primary endpoint for estimating symptom treatment costs in the target population.

Table 1. Cost of therapies included in the analysis

THERAPY	NUMBER OF DOSES	DOSE (MG)	% OF PATIENTS USING A GIVEN DOSE	COST PER DOSE (PLN)	16-WEEK COST (PLN)
Dupilumab	9	200	13.3%	1,538.39	15,807.98
		300	86.7%	1,789.89	
Upadacitinib	112	15	49.2%	68.75	11,612.92
		30	50.8%	137.50	

Table 2. Efficacy after 16 weeks of treatment

ENDPOINT	DUPILUMAB	UPADACITINIB
EASI 100	5.6%	14.8%
Improvement in WP-NRS ≥4	38.1%	54.7%
WP-NRS 0/1	15.5%	30.2%
EASI 90	22.5%	40.8%
EASI 90 and WP-NRS 0/1	8.9%	19.9%

RESULTS

The average cost of a 16-week therapy with dupilumab and upadacitinib is PLN 15,807.98 and PLN 11,612.92, respectively (Table 1). However, the cost of achieving EASI 100 per patient (calculated as the quotient of the 16-week cost and the corresponding efficacy parameter from Table 2) is PLN 282,285.32 for DUPI and PLN 78,465.71 for UPA. This indicates that the cost of reaching complete skin clearance for one patient on dupilumab could cover the treatment of 3.6 patients receiving upadacitinib who also attain EASI 100. The difference in cumulative treatment costs per patient achieving fully clear skin continues to increase slightly beyond the assessment point (Figure 1). Significant differences in the costs of achieving a given clinical condition after 16 weeks of treatment, in favor of UPA, were also observed for the other endpoints (Figure 2).

Figure 1. Cumulative cost per complete cure (EASI 100)

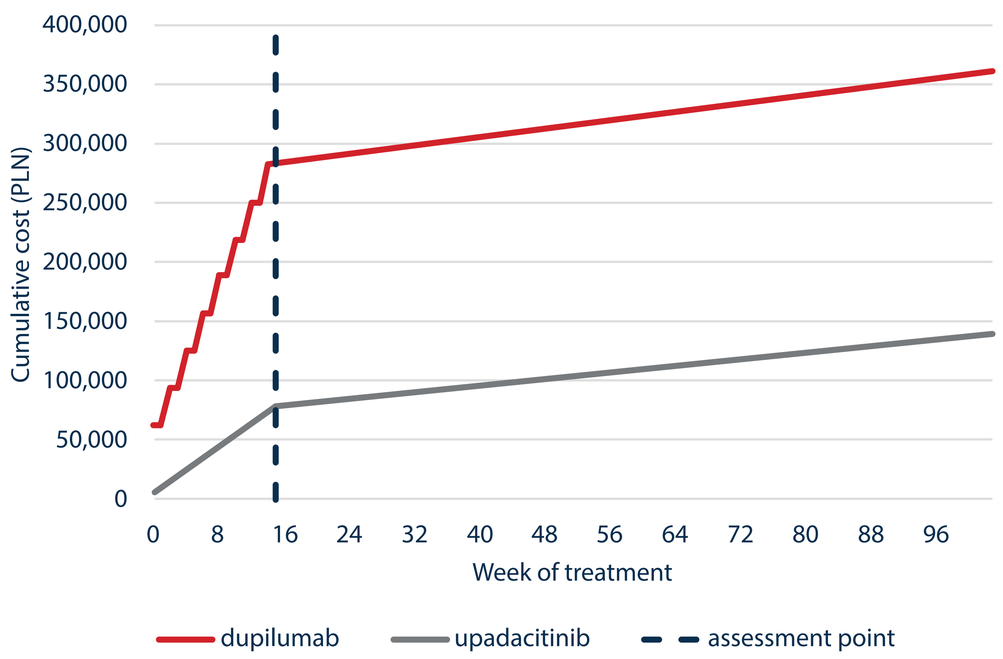

Figure 2. Cost per event – week 16

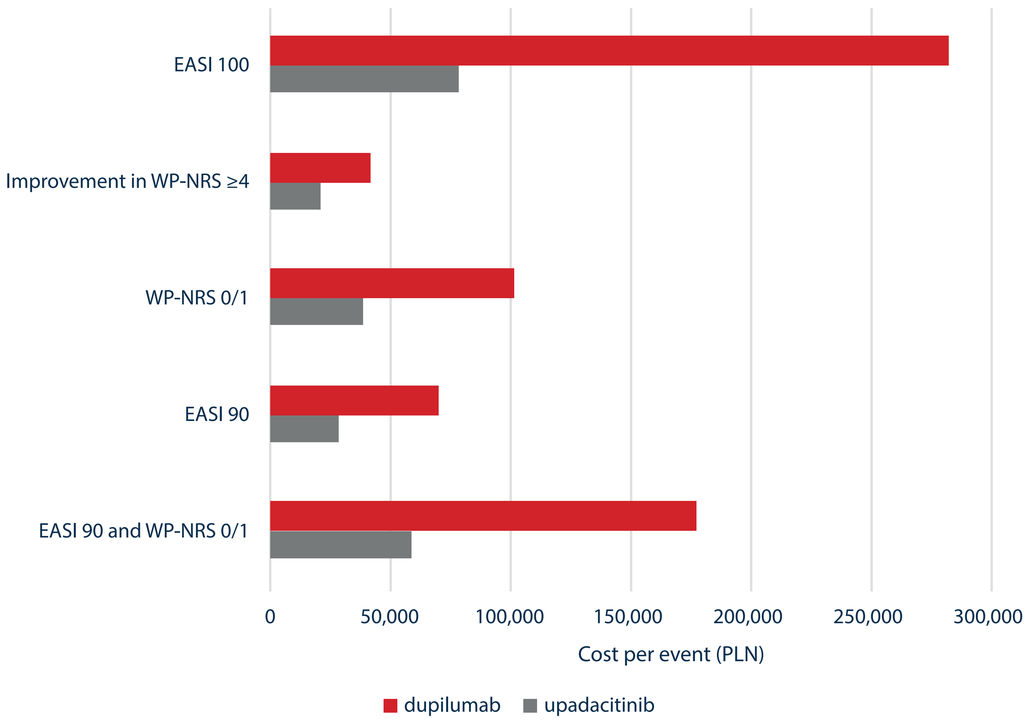

Table 3. Cost savings calculations

CATEGORY	ROW	VALUE
16-week cost of DUPI (PLN)	A	15,807.98
16-week cost of UPA (PLN)	B	11,612.92
Percentage of patients achieving EASI 100 after 16 weeks of DUPI therapy	C	5.6%
Percentage of patients achieving EASI 100 after 16 weeks of UPA therapy	D	14.8%
Number of patients aged ≥12 years starting DUPI treatment per year	E	474[11]
Number of patients achieving EASI 100 after 16 weeks of DUPI therapy per year	F = C × E	27
16-week costs of DUPI for all patients starting therapy per year (PLN)	G = A × E	7,492,981
Number of patients starting UPA treatment needed to achieve the same number of patients (27) achieving EASI 100 after 16 weeks as with DUPI	H = F / D	179
16-week costs of UPA for number of patients starting treatment in row H (PLN)	I = B × H	2,082,794
Cost savings potential per year (PLN)	J = G - I	5,410,188

The results of the budget impact analysis indicate that in 2024, 474 patients aged 12 years and older initiated treatment with dupilumab in Poland, generating drug costs of PLN 7.5 million. Of these, 27 patients achieved EASI 100 after 16 weeks of therapy (calculations based on the efficacy parameters from Table 2.). The same outcome (i.e., 27 patients achieving EASI 100) could have been achieved if 179 patients had initiated treatment with upadacitinib, at a total drug cost of PLN 2.1 million, resulting in potential savings of PLN 5.4 million for the public payer (Table 3).

CONCLUSIONS

Upadacitinib demonstrates significantly greater efficacy than dupilumab in achieving key treatment outcomes in atopic dermatitis. It enables more than three times as many patients to reach complete skin clearance at the same cost as dupilumab. Consequently, initiating upadacitinib therapy instead of dupilumab in a larger patient population could generate significant cost savings for the Polish healthcare system, exceeding PLN 5 million annually.

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CONTACT INFORMATION: karolina.dziadek@mahta.pl