Economic Burden and Unmet Need among Adult Patients with Varying Patterns of Atopic Dermatitis: Results from the Adelphi Real World Disease Specific Programme

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KEY TAKEAWAYS/CONCLUSIONS

- 60% of patients with moderate-to-severe atopic dermatitis (AD) experience mixed flaring and day-to-day symptoms.
- Patients experiencing mixed flaring and day-to-day symptoms have higher Healthcare Resource Utilisation (HCRU) and Advanced Systemic Treatment (AST) use versus those with only day-to-day or flaring symptoms.
- Furthermore, patients experiencing mixed flaring and day-to-day symptoms have remaining unmet needs, reflected in loss of work productivity, activity impairment, quality of life impact and ongoing disease/symptom burden.

INTRODUCTION/OBJECTIVE

- Studies have shown that patients with AD continue to have significant psychosocial and economic burden, despite a range of treatment options, demonstrating the need to understand key disease characteristics of AD in relation to increased burden [1,2].
- The study aimed to characterize patients with AD with the highest economic and patient burden over a 12-month period across US/Europe (France/Germany/Italy/Spain/United Kingdom).

METHODS

- Data were drawn from the Adelphi AD Disease Specific Programme™, a cross-sectional survey, with retrospective data collection of physicians and their patients with AD in US/Europe collected August 2022-April 2024[3-6].
- We performed latent class analysis to identify distinct patient groups, clustered using the variables shown in **Table 1**. The 4-class solution was guided by a combination of Bayesian Information Criterion and disease knowledge.
- We profiled patient classes based on physician-reported patient demographics, clinical status 12 months prior to and at data collection (currently), current treatment, and HCRU including consultations/tests over the last 12 months by patient group.
- We descriptively analysed patient-reported Work Productivity/Activity Impairment (WPAI), EuroQoL-5 dimensions (EQ5D), Patient-Oriented Eczema Measure (POEM), Dermatology Life Quality Index (DLQI), Adelphi Adherence Questionnaire (ADAQ - Higher score worse), NRS-Itch (range 0-10, higher score worse), NRS-Sleep (range 0-10, lower score worse).

RESULTS

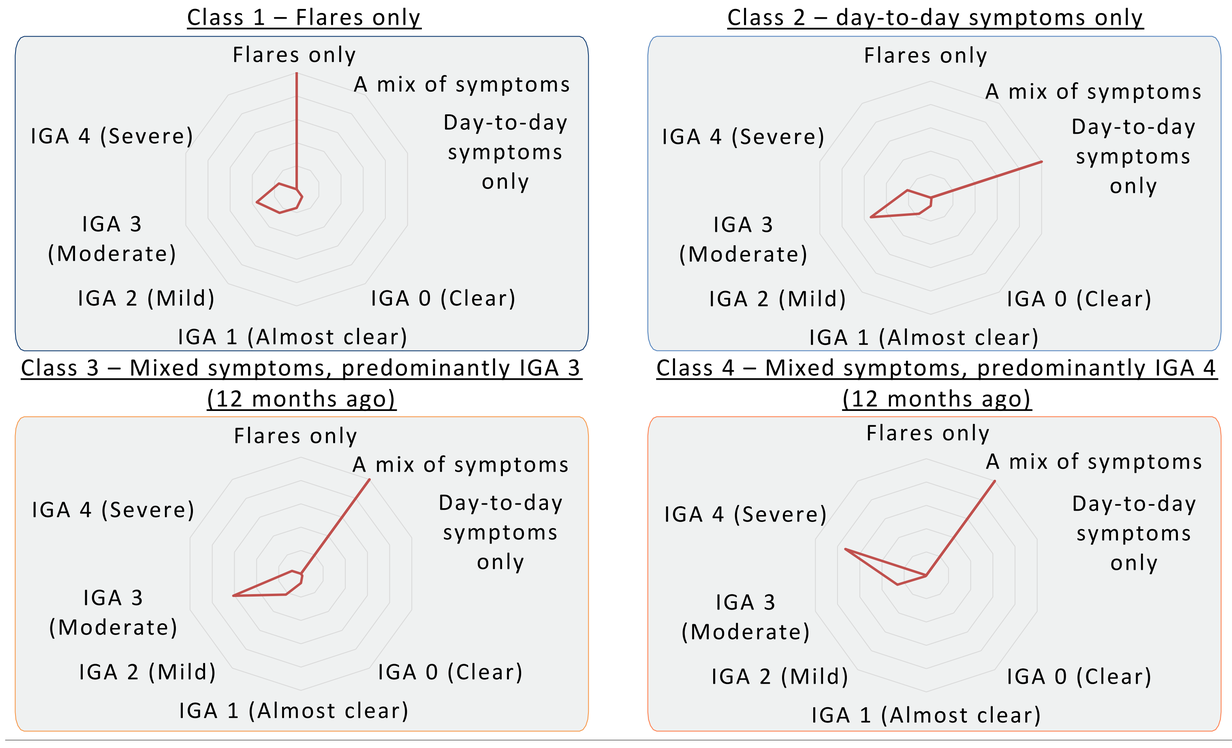
Table 1. Clustering variables used to create the classes, as defined below.

	Base (n=1114)	Class 1 (n=199)	Class 2 (n=242)	Class 3 (n=508)	Class 4 (n=165)
Patient age (years), mean (SD)	37.4 (13.67)	35.2 (12.50)	37.6 (14.79)	38.6 (13.76)	36.0 (12.70)
Patient sex, female, n (%)	556 (50)	100 (50)	122 (50)	253 (50)	81 (49)
Patient race/ethnic origin, n (%)					
White/Caucasian	996 (89)	177 (89)	225 (93)	445 (88)	149 (90)
Region, n (%)					
EU5	816 (73)	148 (74)	134 (55)	400 (79)	134 (81)
US	298 (27)	51 (26)	108 (45)	108 (21)	31 (19)
Atopic Triad comorbidities, n (%)					
Atopic triad	369 (33)	61 (31)	72 (30)	163 (32)	73 (44)
Time since diagnosis (years), mean (SD)	8.8 (9.53)	7.1 (9.03)	8.6 (10.66)	9.0 (9.05)	10.3 (9.58)
Number of flares over past 12 months, mean (SD)	1.3 (1.77)	1.54 (1.27)	0 (0.00)	1.45 (1.45)	2.46 (3.40)
Pattern of disease, n (%)					
Flares only	199 (18)	199 (100)	0 (0)	0 (0)	0 (0)
Day-to-day symptoms only	242 (22)	0 (0)	242 (100)	0 (0)	0 (0)
Mix of flares and day-to-day	673 (60)	0 (0)	0 (0)	508 (100)	165 (100)
IGA 12 months ago, n (%)					
Clear	27 (2)	15 (8)	3 (1)	9 (2)	0 (0)
Almost clear	89 (8)	31 (16)	18 (7)	40 (8)	0 (0)
Mild	203 (18)	50 (25)	41 (17)	110 (22)	2 (1)
Moderate	554 (50)	71 (36)	130 (54)	310 (61)	43 (26)
Severe	241 (22)	32 (16)	50 (21)	39 (8)	120 (73)
BSA % 12 months ago, mean (SD)	20.9 (13.92)	16.1 (13.24)	17.3 (11.07)	18.3 (9.70)	40.1 (13.87)

All patients with available data for clustering variables (n=1114). Atopic Triad = Comorbid diagnosis of allergic rhinitis or asthma. Patient race asked in the US, patient ethnic origin asked in EU4 (excluding France).

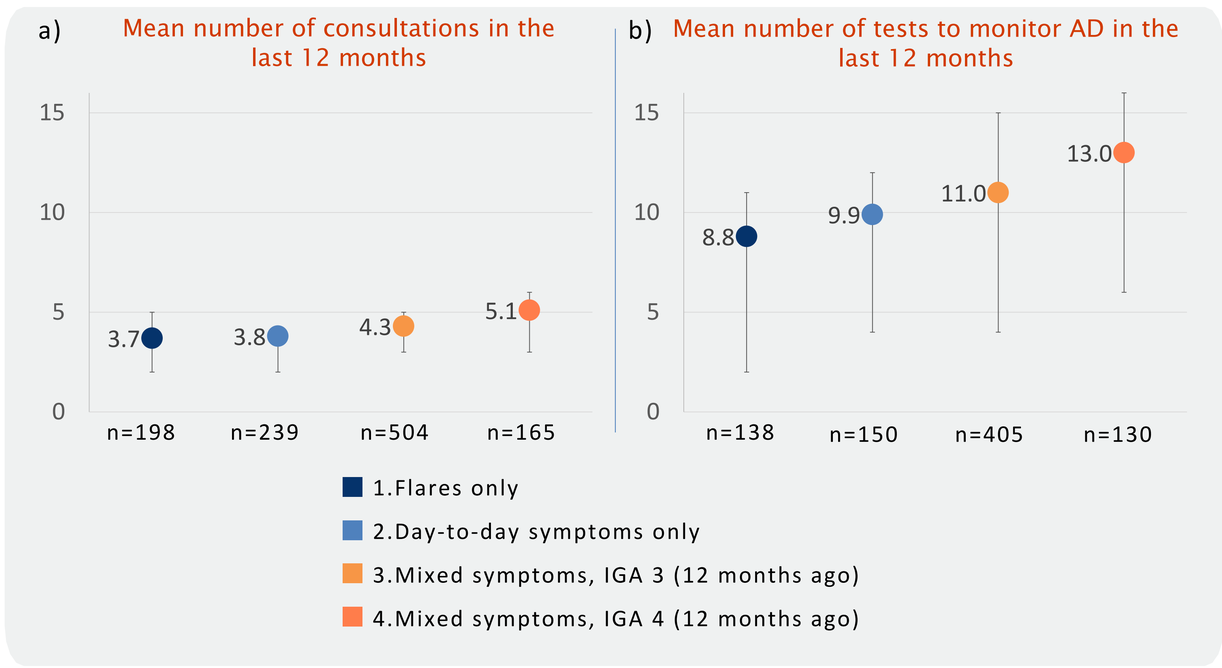
- Pattern of disease and IGA 12 months ago were the clustering variables with the largest differences across the 4 classes.**(Figure 1)**.

Figure 1. Visualisation of classes and their applied names based on pattern of disease and IGA 12 months ago



- In terms of consultations and tests in the last 12 months, the patient groups with both flaring and day-to-day symptoms (classes 3 and 4) had the highest HCRU **(Figure 2)**.

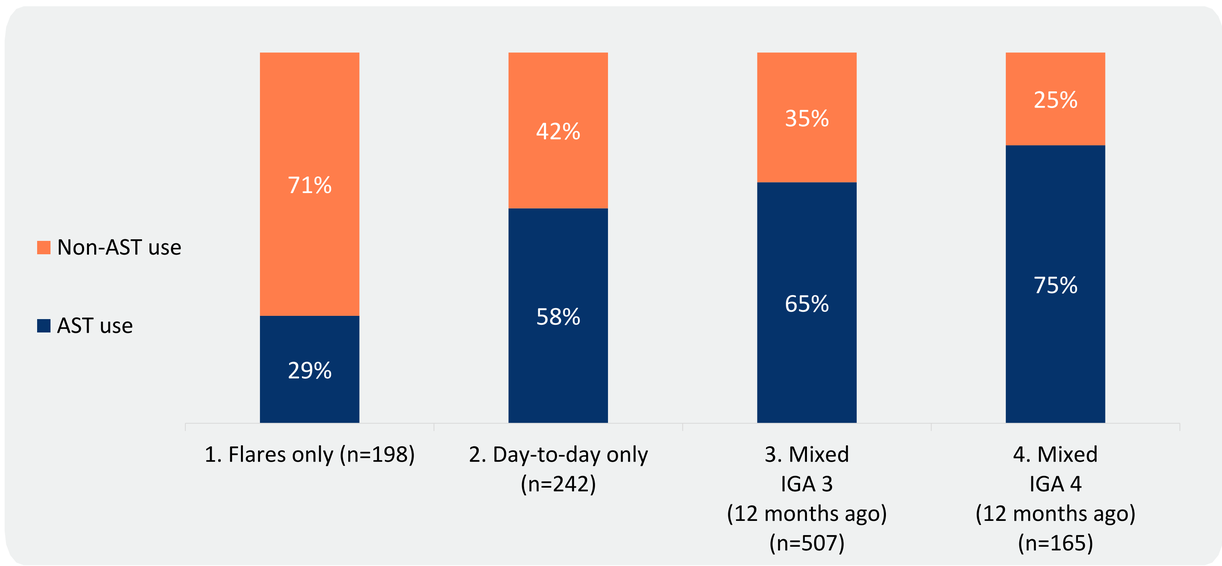
Figure 2. Class profiling HCRU – Number of consultations and tests to monitor AD in the last 12 months



All patients with available data for clustering variables (n=1114). Change in patient number due to don't know responses /missing data.

- The patient groups experiencing both flares and day-to-day symptoms (classes 3 and 4) had the highest proportions of AST users with 65% and 75% respectively **(Figure 3)**.

Figure 3. Class profiling - Current AST use



All patients with available data for clustering variables (n=1114). AST use refers to patients currently prescribed AST. Change in patient number due to don't know responses /missing data.

- Patients with AD experiencing a mix of both flaring and day-to-day symptoms (classes 3 and 4) exhibited the highest burden on quality of life and work productivity **(Table 2)**.

Table 2. Class profiling – Patient-reported outcomes

Mean (SD)	1. Flares only (n=199)	2. Day-to-day symptoms only (n=242)	3. Mixed symptoms, predominantly IGA 3 (12 months ago) (n=508)	4. Mixed symptoms, predominantly IGA 4 (12 months ago) (n=165)
EQ5D-VAS, [range 0-100]	n=80 77.31 (14.60)	n=80 82.74 (12.52)	n=165 77.25 (13.94)	n=47 72.96 (17.60)
EQ5D-5L (US tariff), [range 0-1]	n=81 0.86 (0.17)	n=81) 0.92 (0.11)	n=165 0.86 (0.15)	n=47 0.83 (0.19)
WPAI: Percent overall work impairment due to problem, [range 0-100]	n=42 18.81 (18.11)	n=47 15.43 (13.72)	n=88 23.35 (21.49)	n=25 23.74 (22.74)
WPAI: Percent activity impairment due to problem, [range 0-100]	n=80 22.62 (17.84)	n=80 22.50 (16.03)	n=165 25.88 (20.69)	n=46 32.39 (24.69)
POEM, [range 0-28]	n=80 5.01 (5.20)	n=82 4.63 (4.88)	n=165 6.62 (5.62)	n=47 8.62 (7.73)
DLQI, mean (SD) [range 0-30]	n=80 4.29 (3.97)	n=81 3.53 (3.88)	n=165 5.51 (4.50)	n=44 7.77 (7.79)
ADAQ, mean (SD) [range 0-4]	n=73 0.43 (0.43)	n=80 0.34 (0.47)	n=164 0.41 (0.50)	n=46 0.55 (0.59)
NRS average Itch 7 days, mean (SD) [range 0-10]	n=81 4.1 (2.50)	n=82 3.54 (2.09)	n=166 4.41 (2.43)	n=47 5.15 (2.70)
NRS Sleep 7 days, mean (SD) [range 0-10]	n=80 8.18 (2.04)	n=81 7.56 (2.72)	n=164 7.38 (2.04)	n=47 6.53 (2.72)

NRS-Itch (0=No itch, 10=Worst itch imaginable), NRS-Sleep (0=No sleep, 10=Perfect sleep), ADAQ (lower score = better adherence). WPAI overall only available for patients in full-time work. Variable base sizes shown due to missing data.

DISCLOSURES:

JS has received honoraria as a consultant and/or advisory board member for Abbvie, Aldena, Aldena, Amgen, AObiome, Apollo, Arcutis, Arena, Asana, Aslan, Attovia, Bodewell, Boehringer-Ingelheim, Bristol-Meyers Squibb, Cara, Castle Biosciences, Celgene, Connect Biopharma, Corevitas, Dermavant, Eli Lilly, FIDE, Formation Bio, Galderma, GlaxoSmithKline, Incyte, Inmagene, Invea, Kiniksa, Leo Pharma, Merck, Nektar, Novartis, Optum, Pfizer, RAPT, Recludix, Regeneron, Sandoz, Sanofi-Genzyme, Shaperon, TARGET-RWE, Teva, Triveni, UCB, Union, UpToDate; speaker for Abbvie, Arcutis, Dermavant, Eli Lilly, Galderma, Leo Pharma, Pfizer, Regeneron, Sanofi-Genzyme; received institutional grants from Galderma, Incyte, Pfizer. **AS** is an employee of Amgen Inc. **KD** is an employee of Amgen Inc. **JQ** is an employee of Kyowa Kirin, Inc. **OH, CM, EQ, JP** are employees of Adelphi Real World, Bollington, UK.

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ABBREVIATIONS:

HCRU, Healthcare Resource utilisation; **AST,** Advanced Systemic Therapy; **AD,** Atopic Dermatitis; **US,** United States; **WPAI,** Work Productivity/Activity Impairment; **NRS,** Numerical Rating Scale; **SD,** Standard Deviation; **EU5,** France, Germany, Italy, Spain, UK; **IGA,** Investigator's Global Assessment; **BSA,** Body Surface Area; **EQ5D-VAS,** EuroQol-5 Dimensions Visual Analogue Scale; **EQ5D,** EuroQol-5 Dimensions; **POEM,** Patient-oriented Eczema Measure; **DLQI,** Dermatology Life Quality Index; **ADAQ,** Adelphi Adherence Questionnaire.