Demographics and disease characteristics of patients with alopecia areata with comorbid atopic dermatitis, vitiligo or anxiety/depression: TARGET-DERM AA

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Introduction

- Alopecia areata (AA) is a chronic autoimmune disease. Common AA comorbidities include atopic dermatitis (AD), vitiligo, anxiety and/or depression (AnxDep).
- TARGET-DERM AA is an ongoing longitudinal, real-world study of United States and Canadian AA patients.

Objective

- To assess characteristics among AA patients with and without the above comorbidities.

Methods

- At enrollment between December 2021 and June 2024, the following outcomes were collected via a patient questionnaire: comorbidities, Patient Global Impression of Severity-AA (PGIS-AA), PROMIS-Anxiety, PROMIS-Depression, Children's/Dermatology of Life Quality Index (C/DLQI), and the Alopecia Areata Patient Priority Outcomes (AAPPO).
- Similarly, the following clinician-reported outcomes were collected: Severity of Alopecia Tool (SALT), Measure for Eyebrow and Eyelash Hair Loss.
- Patient characteristics were compared across subgroups.
- Inclusion Criteria:
  - Enrolled in TARGET-DERM AA
  - Completed patient questionnaire at enrollment

Results

- Of 267 AA patients, 61.4% were female; 26.6% were aged <12 years, 20.2% were 12-17 year of age, and 53.2% were 18 or older. (Table 1)

- Overall:
  - 21.0% self-reported an AD diagnosis (19.7% of all pediatric patients, 11.1% adolescent, and 25.4% adults. Figure 2)
  - 7.1% of patients reported vitiligo (7.0% pediatric, 3.7% adolescent, and 8.5% adult)
  - 44.9% reported AnxDep (21.1% of pediatric, 40.7% of adolescent, and 58.5% of adult AA patients, p<.0001).

- Distribution of AA patients with severe AA disease (SALT≥50) :
  - 42.1% of patients with comorbid vitiligo had severe AA disease and 27.8% patients without comorbid vitiligo had severe AA disease.
  - 28.6% with comorbid AD had severe AA compared to 28.9% of those not reporting AD.
  - 30.0% with of AnxDep had severe AA and 27.9% of non-AnxDep, All p>0.2.

- Distribution of AA patients with patient-reported 'severe/very severe' AA disease (PGIS-AA) :
  - 42.1% of patients with comorbid vitiligo vs 36.3% without vitiligo
  - 41.1% of patients with comorbid AD compared to 35.6% without AD
  - 42.5% of patients with comorbid AnxDep vs 31.9% without AnxDep, All p>.07.
  - For the clinician-reported outcomes, there were no statistically significant differences between those with and without a comorbidity of interest. (Figure 1 and Table 2)

Table 1. Demographic characteristics of AA patients who completed the patient questionnaire

Characteristic	All (N=267)	Vitiligo Yes (N=19)	Vitiligo No (N=248)	Vitiligo P-value	Atopic Dermatitis Yes (N=56)	Atopic Dermatitis No (N=211)	Atopic Dermatitis P-value	Anxiety and/or Depression Yes (N=120)	Anxiety and/or Depression No (N=147)	Anxiety and/or Depression P-value
Age at enrollment				0.1512			0.1209			<.0001
Mean (SD)	27.3 (20.1)	35.9 (24.7)	26.6 (19.6)		31.8 (21.5)	26.1 (19.6)		33.7 (19.8)	22.0 (18.8)	
Median (n)	19.0 (267)	38.0 (19)	18.5 (248)		30.0 (56)	18.0 (211)		32.5 (120)	15.0 (147)	
Min - Max	2.0 - 77.0	3.0 - 76.0	2.0 - 77.0		2.0 - 76.0	2.0 - 77.0		3.0 - 77.0	2.0 - 75.0	
Sex, n (%)				0.5164			0.0011			0.0008
Male	103 (38.6%)	6 (31.6%)	97 (39.1%)		11 (19.6%)	92 (43.6%)		33 (27.5%)	70 (47.6%)	
Female	164 (61.4%)	13 (68.4%)	151 (60.9%)		45 (80.4%)	119 (56.4%)		87 (72.5%)	77 (52.4%)	
Race-ethnicity, n (%)				0.5573			0.0881			0.0010
NH White	139 (52.1%)	10 (52.6%)	129 (52.0%)		37 (66.1%)	102 (48.3%)		79 (65.8%)	60 (40.8%)	
NH Black	17 (6.4%)	1 (5.3%)	16 (6.5%)		5 (8.9%)	12 (5.7%)		7 (5.8%)	10 (6.8%)	
NH Asian	8 (3.0%)	1 (5.3%)	7 (2.8%)		1 (1.8%)	7 (3.3%)		4 (3.3%)	4 (2.7%)	
Hispanic/Latino	43 (16.1%)	5 (26.3%)	38 (15.3%)		5 (8.9%)	38 (18.0%)		13 (10.8%)	30 (20.4%)	
Other/Not Reported	60 (22.5%)	2 (10.5%)	58 (23.4%)		8 (14.3%)	52 (24.6%)		17 (14.2%)	43 (29.3%)	
Site type, n (%)				0.8722			0.0842			0.0191
n	267	19	248		56	211		120	147	
Academic	164 (61.4%)	12 (63.2%)	152 (61.3%)		40 (71.4%)	124 (58.8%)		83 (69.2%)	81 (55.1%)	
Community	103 (38.6%)	7 (36.8%)	96 (38.7%)		16 (28.6%)	87 (41.2%)		37 (30.8%)	66 (44.9%)	

Figure 1. Proportion of AA patients having the stated clinical outcome

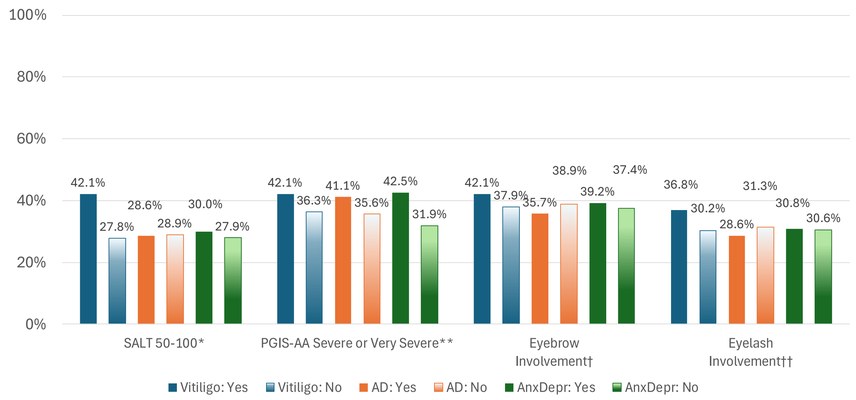

Figure 2. Percentage of AA patients reporting the named comorbidity by age group

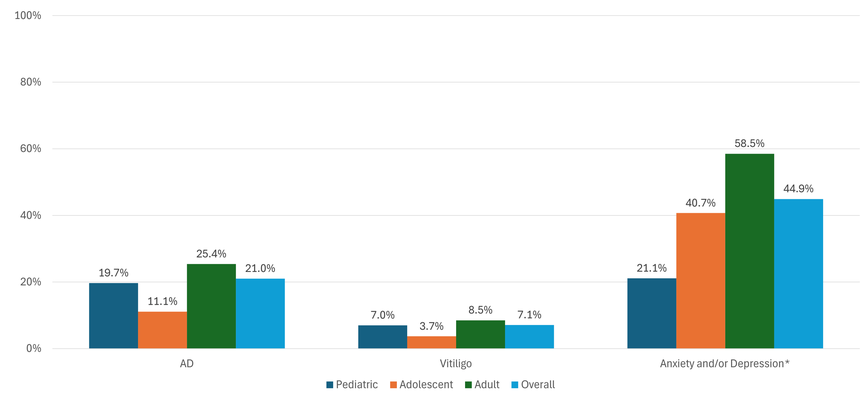

Table 2. Clinician-Reported Outcomes for Patients with Comorbid Anxiety or Depression

Characteristic	Overall (N=267)	Anxiety or Depression Yes (N=120)	Anxiety or Depression No (N=147)	P-value
SALT				0.5226
Mean (SD)	36.3 (37.1)	38.0 (37.2)	34.9 (37.0)	
Median (n)	19.8 (267)	24.9 (120)	17.1 (147)	
Min - Max	1.0 - 100	1.2 - 100	1.0 - 100	
CGI-AA				0.5403
Mean (SD)	2.2 (1.1)	2.3 (1.1)	2.2 (1.1)	
Median (n)	2.0 (267)	2.0 (120)	2.0 (147)	
Min - Max	1.0 - 4.0	1.0 - 4.0	1.0 - 4.0	
Percent Hair loss				0.3366
Mean (SD)	38.1 (36.0)	40.3 (36.2)	36.4 (35.9)	
Median (n)	24.0 (266)	25.0 (119)	20.0 (147)	
Min - Max	1.0 - 100	1.0 - 100	1.0 - 100	
Eyebrow				0.6623
Mean (SD)	0.8 (1.2)	0.9 (1.2)	0.8 (1.1)	
Median (n)	0.0 (267)	0.0 (120)	0.0 (147)	
Min - Max	0.0 - 3.0	0.0 - 3.0	0.0 - 3.0	
Eyelash				0.9337
Mean (SD)	0.7 (1.2)	0.7 (1.1)	0.7 (1.2)	
Median (n)	0.0 (267)	0.0 (120)	0.0 (147)	
Min - Max	0.0 - 3.0	0.0 - 3.0	0.0 - 3.0	
Alopecia totalis/alopecia universalis (AT/AU), n (%)				0.9746
n	267	120	147	
AT/AU	67 (25.1%)	30 (25.0%)	37 (25.2%)	
Not AT/AU	200 (74.9%)	90 (75.0%)	110 (74.8%)	

Table 3. Patient-reported outcomes at enrollment for those with and without comorbid anxiety and/or depression

Characteristic	Overall (N=267)	Anxiety and/or Depression Yes (N=120)	Anxiety and/or Depression No (N=147)	P-value
PGIS-AA (0 - 4)				0.0017
Mean (SD)	2.1 (1.2)	2.4 (1.1)	1.9 (1.2)	
Median (n)	2.0 (264)	2.0 (120)	2.0 (144)	
Min - Max	0.0 - 4.0	0.0 - 4.0	0.0 - 4.0	
Patient Global Impression of severity (PGIS-AA), n (%)				0.0100
n	264	120	144	
0. None	19 (7.2%)	4 (3.3%)	15 (10.4%)	
1. Mild	72 (27.3%)	25 (20.8%)	47 (32.6%)	
2. Moderate	76 (28.8%)	40 (33.3%)	36 (25.0%)	
3. Severe	52 (19.7%)	24 (20.0%)	28 (19.4%)	
4. Very Severe	45 (17.0%)	27 (22.5%)	18 (12.5%)	
AAPPO-Hair loss				0.0472
Mean (SD)	3.7 (2.9)	4.0 (2.9)	3.2 (2.8)	
Median (n)	3.0 (151)	3.0 (82)	3.0 (69)	
Min - Max	0.0 - 12.0	0.0 - 12.0	0.0 - 12.0	
AAPPO-Emotional symptoms				0.0010
Mean (SD)	8.4 (4.7)	9.4 (4.8)	7.2 (4.4)	
Median (n)	8.0 (196)	10.0 (106)	7.0 (90)	
Min - Max	0.0 - 16.0	0.0 - 16.0	0.0 - 16.0	
AAPPO-Activity limitation				0.0007
Mean (SD)	1.7 (2.5)	2.3 (2.8)	1.0 (1.9)	
Median (n)	0.0 (191)	1.0 (104)	0.0 (87)	
Min - Max	0.0 - 9.0	0.0 - 9.0	0.0 - 8.0	
PROMIS-Anxiety, n (%)				<.0001
Mean (SD)	51.3 (9.5)	54.4 (8.2)	48.4 (9.7)	
Median (n)	51.2 (229)	55.8 (112)	48.3 (117)	
Min - Max	33.5 - 73.3	33.5 - 71.2	33.5 - 73.3	
PROMIS-Depression, n (%)				<.0001
Mean (SD)	48.5 (9.1)	52.2 (8.6)	45.0 (8.2)	
Median (n)	49.0 (227)	51.8 (112)	41.0 (115)	
Min - Max	35.2 - 76.5	35.2 - 76.5	35.2 - 69.4	
CDLQI: Children's Dermatology Life Quality Index, n (%)				0.1904
Mean (SD)	4.8 (5.2)	5.4 (5.0)	4.5 (5.3)	
Median (n)	3.0 (83)	5.5 (30)	3.0 (53)	
Min - Max	0.0 - 22.0	0.0 - 20.0	0.0 - 22.0	
DLQI: Dermatology Life Quality Index, n (%)				0.0203
Mean (SD)	3.7 (4.4)	4.4 (4.8)	2.8 (3.6)	
Median (n)	2.0 (144)	3.0 (81)	2.0 (63)	
Min - Max	0.0 - 23.0	0.0 - 23.0	0.0 - 20.0	

- Among those with and without vitiligo:
  - 42.1% vs 37.9% had eyebrow involvement
  - 36.8% vs 30.2% reported eyelash involvement (Figure 1)
- For patients with and without AD:
  - 35.7% vs 38.9% had eyebrow involvement
  - 28.6% vs 31.3% reported eyelash involvement
- Of patients with and without Anxiety and/or Depression
  - 39.2% vs 37.4% had eyebrow involvement
  - 30.8% v 30.6% reported eyelash involvement
- Patients with anxiety and/or depression had significantly higher patient-reported impressions of severity than those without. (PGIS-AA, p<.01, Table 3)
- As expected, patients with comorbid anxiety and/or depression were identified in the patient-reported outcomes of psychological and quality of life assessments (AAPPO, PROMIS, and DLQI) as having more severe scores. (Table 3)

Conclusion

- In this real-world cohort of AA patients, the presence of specific comorbidities was not associated with statistically significant differences in clinician reported AA severity, eyebrow or eyelash involvement.
- Comorbid AnxDep was associated with increased patient-reported AA disease severity (PGIS-AA) and hair loss.
- Additional research characterizing how dermatologic and psychiatric comorbidities impact health-related quality of life and patient burden has the potential to inform management decisions.

Acknowledgements and Disclosures: TARGET-DERM is a study sponsored by Target RWE. Target RWE is a health evidence solutions company headquartered in Durham, NC. The authors would like to thank all the investigators, participants, and research staff associated with TARGET-DERM. *TARGET-DERM Investigators are the participating investigators who provided and cared for study patients; they are authors and non-author contributors. For the complete list, please see ClinicalTrails.gov (NCT03661866). **MKH** has functioned as an advisory board member or investigator (funds paid to institution) for Arcutis Biotheraputics, Abbvie, Eli Lilly, Pfizer, RegenLab, SUN Pharmaceuticals, Cassiopea, and the National Alopecia Areata Foundation; **BNU** had research funds paid to institution from: Incyte, Pfizer, and Rapt. He consulted for: Arcutis Biotherapeutics, Bristol Myers Squib, Castle Biosciences, Fresenius Kabi, Galderma, Pfizer, Primus Pharmaceuticals, Sanofi, and UCB. **NAM** has rendered professional services to AbbVie, Arena Pharmaceuticals, Bristol Myers Squibb, Concert Pharmaceuticals, Eli Lilly, La Roche Posay, and Pfizer; **ASP** has served as an investigator or consultant for AbbVie, Boehringer-Ingelheim, Bristol Myers Squibb, Catawba, Dermavant, Eli Lilly, Galderma, Janssen, LEO Pharma, Novartis, Regeneron, Sanofi/Genzyme, Seanergy, and UCB; and has served on AbbVie and Galderma Data Safety Monitoring Boards; **MSC** was an investigator for Biofronterra; **LWL** has rendered professional services to Castle Creek Biosciences, Eli Lilly, Pfizer, Regeneron Pharmaceuticals, Inc., Chiesi, AbbVie, Amryt Pharma, Krystal Biotech, Novartis, Kimberly Clark– consultant; AbbVie, Amgen, Amryt Pharma, Arcutis Biotherapeutics, Castle Creek Biosciences, Celgene, Eli Lilly, Galderma, Incyte, Mayne Pharmaceuticals, MoonLake Pharmaceutical, Novartis, Pfizer, Regeneron Pharmaceuticals Inc., Sanofi, Target Pharma, Trevi Therapeutics, Timber, UCB – investigator; Amryt Pharma, Krystal Biotech – speaker. **SR, CB, and AS** are employee of AbbVie and may hold stock options. **KDK, BM, and JMC** are employees of Target RWE and may hold stock options.