

Table SI. Characteristics and Comorbidities of Patients Who Did and Did Not Receive 2L Treatments

Characteristic	Adults			Adolescents		
	No 2L treatments N = 3,277	With 2L treatments N = 4,426	P-value	No 2L treatments N = 240	With 2L treatments N = 355	P- value
Age (years), mean $\pm$ SD	42.4 $\pm$ 13.7	43.1 $\pm$ 13.6	0.015*	14.5 $\pm$ 1.6	14.6 $\pm$ 1.6	0.749
Sex, N (%)			0.004*			0.121
Female	1,981 (60.5%)	2,821 (63.7%)		106 (44.2%)	181 (51.0%)	
Male	1,296 (39.5%)	1,605 (36.3%)		134 (55.8%)	174 (49.0%)	
US region, N (%)			0.031*			0.790
Midwest	554 (16.9%)	801 (18.1%)		48 (20.0%)	74 (20.8%)	
Northeast	896 (27.3%)	1,176 (26.6%)		62 (25.8%)	79 (22.3%)	
South	1,233 (37.6%)	1,744 (39.4%)		98 (40.8%)	154 (43.4%)	
West	594 (18.1%)	705 (15.9%)		32 (13.3%)	48 (13.5%)	
Insurance type, N (%)			0.012*			0.882
Managed care ^a	2,402 (73.3%)	3,375 (76.3%)		174 (72.5%)	261 (73.5%)	
Consumer-driven ^b	734 (22.4%)	876 (19.8%)		59 (24.6%)	82 (23.1%)	
Comprehensive	141 (4.3%)	175 (4.0%)		7 (2.9%)	12 (3.4%)	
Type of alopecia areata, N (%)			<0.001*			0.199

AT or AU	97 (3.0%)	248 (5.6%)		10 (4.2%)	25 (7.0%)	
Other AA	3,180 (97.0%)	4,178 (94.4%)		230 (95.8%)	330 (93.0%)	
Comorbidities, N (%)						
Anemia	97 (3.0%)	149 (3.4%)	0.348	0 (0.0%)	6 (1.7%)	0.086
Any atopic disorder ^c	546 (16.7%)	925 (20.9%)	<0.001*	54 (22.5%)	98 (27.6%)	0.192
Any autoimmune disorder ^d	384 (11.7%)	703 (15.9%)	<0.001*	10 (4.2%)	26 (7.3%)	0.159
Any cardiovascular disorder ^e	453 (13.8%)	616 (13.9%)	0.932	6 (2.5%)	28 (7.9%)	0.009*
Any mental health disorder ^f	594 (18.1%)	876 (19.8%)	0.070	27 (11.3%)	53 (14.9%)	0.243
CCI, mean ± SD	0.32 ± 0.82	0.28 ± 0.75	0.019*	0.1 ± 0.4	0.2 ± 0.4	0.116
CCI categories			0.107			0.020*
0	2,497 (81.8%)	3,342 (79.5%)		202 (88.6%)	275 (81.6%)	
1-2	483 (15.8%)	739 (17.6%)		25 (11.0%)	61 (18.1%)	
3-4	57 (1.9%)	97 (2.3%)		0 (0.0%)	1 (0.3%)	
5+	16 (0.5%)	24 (0.6%)		1 (0.4%)	0 (0.0%)	
CCI component comorbidities						
Myocardial infarction	14 (0.4%)	13 (0.3%)	0.432	0 (0.0%)	0 (0.0%)	—
Congestive heart failure	30 (0.9%)	38 (0.9%)	0.888	0 (0.0%)	0 (0.0%)	—
Peripheral vascular disease	64 (2.0%)	70 (1.6%)	0.252	0 (0.0%)	1 (0.3%)	1.000
Cerebrovascular disease	66 (2.0%)	87 (2.0%)	0.946	1 (0.4%)	1 (0.3%)	1.000
Dementia	2 (0.1%)	4 (0.1%)	1.000	0 (0.0%)	0 (0.0%)	—
Chronic pulmonary disease	291 (8.9%)	477 (10.8%)	0.007*	24 (10.0%)	61 (17.2%)	0.019*
Rheumatic disease	60 (1.8%)	148 (3.3%)	<0.001*	1 (0.4%)	1 (0.3%)	1.000

Peptic ulcer disease	14 (0.4%)	18 (0.4%)	1.000	1 (0.4%)	0 (0.0%)	0.403
Liver disease, mild	89 (2.7%)	117 (2.6%)	0.902	0 (0.0%)	1 (0.3%)	1.000
Diabetes without chronic complications	176 (5.4%)	264 (6.0%)	0.289	2 (0.8%)	8 (2.3%)	0.330
Diabetes with chronic complications	47 (1.4%)	61 (1.4%)	0.913	0 (0.0%)	0 (0.0%)	—
Hemiplegia or paraplegia	4 (0.1%)	5 (0.1%)	1.00	0 (0.0%)	0 (0.0%)	—
Renal disease	36 (1.1%)	54 (1.2%)	0.701	1 (0.4%)	0 (0.0%)	0.403
Any malignancy, including leukemia and lymphoma, except malignant neoplasm of skin	77 (2.3%)	109 (2.5%)	0.807	0 (0.0%)	0 (0.0%)	—
Liver disease, moderate, or severe	2 (0.1%)	6 (0.1%)	0.408	1 (0.4%)	0 (0.0%)	0.403
Metastatic solid tumor	8 (0.2%)	10 (0.2%)	1.000	0 (0.0%)	0 (0.0%)	—
AIDS/HIV	4 (0.1%)	12 (0.3%)	0.207	0 (0.0%)	0 (0.0%)	—

* $p < 0.05$. Abbreviations: 2L, second line; AA, alopecia areata; AT, alopecia totalis; AU, alopecia universalis; CCI, Charlson Comorbidity Index; SD, standard deviation; US, United States.

Notes: ^a Composite of health maintenance organization, preferred provider organization, point of service, and exclusive provider organization plans; ^b Composite of consumer-driven health plans and high-deductible health plans; ^c Composite of allergic rhinitis, asthma, atopic dermatitis, celiac disease, chronic urticaria, and conjunctivitis; ^d Composite of ankylosing spondylitis, Crohn's disease, diabetes mellitus, Hashimoto's disease, psoriasis, rheumatoid arthritis, systematic lupus erythematosus, Sjögren's syndrome, ulcerative colitis, and vitiligo; ^e Composite of atherosclerosis, chest pain, dyspnea/shortness of breath, and heart palpitations; ^f Composite of attention deficit hyperactivity disorder, anxiety disorders, depression, obsessive-compulsive disorder, and substance abuse.

Table SII. Treatments and Associated Codes

Drug	GPI group codes	CPT/HCPCS codes
Injectable corticosteroids		
Hydrocortisone acetate	22-10-00-25-10-18-05	J1700
Triamcinolone acetonide	22-10-00-50-10-18-02, 22-10-00-50-10-18-04, 22-10-00-50-10-18-05	11900, 11901, C9469, J3300, J3301, J3304, Q9993
Oral corticosteroids		
Dexamethasone	22-10-00-20-00-xx-xx, 22-10-00-20-20-20-80, 22-10-99-02-50-xx-xx, 22-10-99-02-55-01-30, 22-10-99-02-55-03-20, 66-10-99-02-33-xx-xx, 66-10-99-03-30-xx-xx, 66-10-99-03-32-xx-xx, 66-10-99-03-70-xx-xx, 66-10-99-04-59-xx-xx, 66-10-99-05-60-xx-xx	J8540
Prednisone	22-10-00-45-00-xx-xx, 22-10-99-02-82-xx-xx, 44-99-80-03-60-xx-xx, 66-10-99-02-75-xx-xx	G9467, G9469, J7506, J7512
Topical corticosteroids		
Clobetasol propionate	90-55-00-25-xx-xx-xx, 90-55-99-02-34-xx-xx, 90-55-99-02-35-xx-xx, 90-55-99-02-36-xx-xx	
Halobetasol propionate	90-55-00-73-10-xx-xx, 90-55-99-02-47-xx-xx, 90-55-99-02-48-xx-xx, 90-55-99-02-49-xx-xx	
Betamethasone	90-10-99-02-06-xx-xx, 90-10-99-02-07-xx-xx, 90-10-99-02-08-xx-xx, 90-10-99-02-09-xx-xx, 90-10-99-02-70-xx-xx, 90-10-99-02-72-xx-xx, 90-10-99-02-75-xx-xx, 90-10-99-03-01-xx-xx, 90-10-99-03-02-xx-xx, 90-10-99-03-04-xx-xx, 90-10-99-03-40-xx-xx, 90-10-99-04-25-xx-xx, 90-10-99-04-28-xx-xx, 90-55-00-20-xx-xx-xx, 90-55-00-02-05-xx-xx, 90-55-00-02-16-xx-xx, 90-55-00-02-32-xx-xx, 90-55-00-03-08-xx-xx, 96-44-50-70-50-xx-xx, 96-44-50-70-53-xx-xx	

Desoximetasone	90-55-00-40-00-xx-xx, 90-55-99-02-19-xx-xx, 96-48-50-58-00-xx-xx
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Topical immunomodulators

Anthralin	90-25-00-20-00-xx-xx
Antipsoriatics	90-25-00-25-00-xx-xx, 90-25-00-70-00-xx-xx, 90-55-99-02-32-xx-xx
Tacrolimus	90-78-40-75-00-xx-xx
Pimecrolimus	90-78-40-60-00-xx-xx

Systemic immunomodulators

Azathioprine	99-40-60-10-xx-xx-xx	J7500
Cyclosporine	99-40-20-20-00-01-xx, 99-40-20-20-00-20-10, 99-40-20-20-30-xx-xx	J7502, J7515
Methotrexate	21-30-00-50-00-03-xx, 21-30-00-50-00-20-80, 21-30-00-50-10-03-xx, 66-25-00-50-00-03-20, 66-25-00-50-10-03-20	J8610
Mycophenolate mofetil	99-40-30-30-10-xx-xx	J7517
Sulfasalazine	52-50-00-60-00-01-10, 52-50-00-60-00-01-20, 52-50-00-60-00-01-50, 52-50-00-60-00-02-40, 52-50-00-60-00-03-10, 52-50-00-60-00-06-10, 52-50-00-60-00-18-10, 52-50-00-60-00-64-50	
Etanercept	66-29-00-30-xx-xx-xx	J1438
Infliximab	52-50-50-40-xx-xx-xx	J1745, Q5102, Q5103, Q5104, Q5109, Q5121
Adalimumab	66-27-00-15-xx-xx-xx	J0135
Certolizumab	52-50-50-20-10-xx-xx	J0717, J0718, C9249
Golimumab	66-27-00-40-00-xx-xx	J1602
Dupilumab	90-27-30-20-00-xx-xx	
Janus kinase (JAK) inhibitors	66-60-30-10-00-xx-xx, 21-53-75-60-20-xx-xx, 66-60-30-65-10-xx-xx	

Other

Bimatoprost	86-25-99-02-10-xx-xx, 86-33-00-15-00-xx-xx, 90-73-40-20-00-xx-xx, 96-44-58-40-20-xx-xx	J7351
Contact immunotherapy (Diphenylcyclopropenone [DPCP] and squaric acid dibutylester [SADBE])	96-48-58-43-00-xx-xx, 96-78-74-82-12-xx-xx	
Oral minoxidil	36-40-00-20-00-xx-xx	S0139
Topical minoxidil	90-73-80-50-10-xx-xx, 96-30-10-74-00-xx-xx	
Simvastatin/ezetimibe	39-99-40-02-30-xx-xx	
Excimer laser		96920, 96921, 96922
Photochemotherapy		96912

Abbreviations: CPT, Current Procedural Terminology; GPI, Generic Product Identifier; HCPCS, Healthcare Common Procedure Coding System.