Supplemental Table 1: the characteristics of the included studies investigating JAK inhibitors treatment for alopecia areata

Reference	Study type	Medication and dose	Number of patients	age (years) (Mean/median)	Male % (n)	Duration of alopecia (years) (mean/median)	SALT score baseline (%, mean ± SD or median [range])	Inclusion criteria regarding severity	Prior treatments at baseline
Benton et al. (2022) [1]	Case series	Oral tofacitinib 5 mg twice daily for 6 months	31	43.5± 16.05	22.9% (n=8)	181.1± 165.1*	NI	NI	NI
King et al. (2022) [2]	Phase II, randomized double-blind placebo controlled trial	Oral CTP-543 (deuruxolitinib) 4 mg twice daily for 24 weeks	30	35.7± 11.01	26.6% (n=8)	6.0± 2.78	88.8± 16.19	Severe AA patients with SALT score of 50 or higher	NI
		Oral CTP-543 (deuruxolitinib) 8 mg twice daily for 24 weeks	38	37.3± 14.18	31.6% (n=12)	3.8± 2.72	89.1± 16.41	Severe AA patients with SALT score of 50 or higher	NI
		Oral CTP-543 (deuruxolitinib) 12 mg twice daily for 24 weeks	37	35.8± 12.37	24.3% (n=9)	3.5± 2.3	87.3± 18.74	Severe AA patients with SALT score of 50 or higher	NI
King et al. (2022) [3]	Phase III randomized placebo-controlled	BRAVE-AA1: Oral Baricitinib 2 mg once daily for 36 weeks	184	38.0± 12.8	40.8% (n=75)	12.1±9.8	86.8±18	Severe AA with SALT score of 50 or higher	45.7% (n=84) immunosuppressant including corticosteroids, JAK inhibitors and others. 50.0% (n=92) intralesional therapy. 55.4% (n=102) topical therapy excluding immunotherapy. 31.0% (n=57) topical

									immunotherapy. 18.5% (n=34) phototherapy.
		BRAVE-AA1: Oral Baricitinib 4 mg once daily for 36 week	281	36.3± 13.3	41.3% (n=116)	11.8± 11.1	85.3±18.2	Adults with severe AA with SALT score of 50 or higher	49.1% (n=138) immunosuppressant including corticosteroids, JAK inhibitors and others. 54.1% (n=152) intralesional therapy. 61.6% (n=173) topical therapy excluding immunotherapy.29.9% (n=84) topical immunotherapy. 19.2% (n=54) phototherapy.
		BRAVE-AA2: Oral Baricitinib 2 mg once daily for 36 weeks	156	39.0±13.0	34% (n=53)	13.1±11.8	85.6±18.1	Adults with severe AA with SALT score of 50 or higher	57.1% (n=89) immunosuppressant including corticosteroids, JAK inhibitors and others. 52.6% (n=82) intralesional therapy. 62.2% (n=97) topical therapy excluding immunotherapy.19.9% (n=31) topical immunotherapy and 15.4% (n=24) phototherapy.
		BRAVE-AA2: Oral Baricitinib 4 mg once daily for 36 week	234	38.0± 12.7	38.5% (n=90)	11.9±11.1	84.8±18.1	Adults with severe AA with SALT score of 50 or higher	53% (n=124) immunosuppressant including corticosteroids, JAK inhibitors and others. 44.4% (n=104) intralesional therapy. 63.2% (n=148) topical therapy excluding immunotherapy. 26.9% (n=63) topical immunotherapy and 15.8% (n=37) phototherapy.

Mikhaylov et al. (2022) [4]	Phase IIa randomized controlled multi-center	Topical delgocitinib 30 mg/g twice daily for 12 weeks	20	36.40±13.98	30% (n=6)	15% (3/20) Between 3-months and 2 years 25% (5/20) Between 2 and 5 years 60% (12/20) for over >5 years	67.19	Moderate-to-severe AA with scalp involvement ≥ 30%, and AA duration ≥ 6 months	NI
Yassky et al. (2022) [5]	Randomized IIa, double-blind, placebo-controlled	Oral ritlecitinib 200 mg once daily during induction for 4 weeks and then 50 mg once daily during maintenance for 24 weeks	18	36.3±11.6	22% (n=4)	3.7	91.2	AA with ≥50% scalp hair loss	NI
		Oral brepocitinib 60 mg once daily during induction for 4 weeks and then 30 once daily during maintenance for 24 weeks	16	38.2±12.2	25% (n=4)	3.4	88.4	AA with ≥50% scalp hair loss	NI
Esteves et al. (2021) [6]	Case series	Oral tofacitinib 5 mg twice daily for 8 months. Later, only 5 mg daily at once for 5 months, and at	1	51	0% (n=0)	3	100	NI	TCS and intralesional corticosteroids, topical minoxidil 5%, multiple courses of oral prednisolone, and topical immunotherapy with DPCP.

		the end 5 mg twice weekly at the latest follow-up							
Jerjen et al. (2021) [7]	case series	Oral tofacitinib 2.5-7.5 mg daily with a median treatment during of 9 months	14 (all patients aged between 7 and 11 years)	9.5 (7-11)	50% (n=7)	2.5 (<1-6)	64.7	NI	64% (n=9) prednisolone, 64% (n=9) oral minoxidil (OM), 7% (n=1) azathioprine and 14% (n=2) cyclosporine. Previous topical and physical therapies included: 57% (n=8) corticosteroids, 7% (n=1) tacrolimus, 14 % (n=2) tofacitinib, 7% (n=1) bimatoprost, 14% (n=2) DPCP, 7% (n=1) dithranol and 21% (n=3) intralesional corticosteroids.
Lai et al. (2021) [8]	Roll-over pilot clinical trial	Sublingual tofacitinib 5 mg twice daily for 12 weeks	18	45.11±15.28	22.22% (n=4)	7.79± 11.92	86.01	Moderate-to-severe AA	100% (n= 18) Cyclosporine
King et al. a(2021) [9]	Phase IIa randomized placebo-controlled	Oral ritlecitinib 200 mg once daily then for 4 weeks, then 50 mg once daily for 20 weeks	48	37±13	23% (n=11)	6.7 (0.6-52.3)	89.4	AA with ≥ 50% scalp hair loss	NI
		Oral brepocitinib 60 mg once daily for 4 weeks, then 30 mg once daily for 20 weeks	47	34±11	32% (n=15)	8.4 (0.3-48.5)	86.4	AA with ≥ 50% scalp hair loss	NI

King et al. (2021) [10]	Phase II randomized controlled	Oral baricitinib 1 mg once daily for 36 weeks	28	38.6±11.3	35.7% (n=10)	12.5±12.5	89.3	AA with ≥ 50% scalp hair loss	NI
		Oral baricitinib 2 mg once daily 36 weeks	27	42.5±13.8	14.8% (n=4)	16.9±12.8	86.1	AA with ≥ 50% scalp hair loss	NI
		Oral baricitinib 4 mg once daily 36 weeks	27	42.4±14.9	7.4% (n=2)	12.3±10.1	83.4	AA with ≥ 50% scalp hair loss	NI
Rota et al. (2021) [11]	Retrospective pilot	Oral tofacitinib 10 mg once daily for mean of 12 months	13 (1 patient <18 years old)	32.15±8.04	38.5% (n=5)	9.76±6.55	90	Severe AA	53% (n=7/13) TCS , 53% (7/13) intralesional steroid, 38% (n=5/13) systemic steroid, 61% (n=8/13) cyclosporine, 15% (n=2/13) phototherapy, 8% (n=1/13) squaric acid dibutylester, 15% (n=2/13) Cignolin
Wambier et al. (2021) [12]	Case series	Oral tofacitinib 5-10 mg twice daily for 3 months	12	39.6±12	42% (n=5)	3±2.3	92	Severe AA	NI
Kerkemeyer et al. (2020) [13]	Case series	Oral tofacitinib mean of 7.2 ± 4.0 mg for mean of 15.5 months	45	38.6± 12.8	100% (n=45)	61.2± 74.1*	62.0	NI	NI
Yale et al (2020) [14]	Case series	Oral unknown JAK inhibitor for 24-40 weeks (no information about doses)	4	40.5 (27-65)	100% (n=4)	9	92.9	Severe AA	NI

Akdogan et al. (2019) [15]	Case series	Oral tofacitinib 10 mg/day for 6 months (8 patients); or 7.5 mg/day for 6 months (1 patient)	9 (two patients < 18 years old)	27± 14.8	88.9% (n=8)	8.5 ± 6.5	91.8 ± 11	NI	Systemic corticosteroid 100% (n=9/9), TCS 67% (n=6/9), MTX 33% (n=3/9), psoralen and ultraviolet 11% (n=1, cyclosporine 78% (n=7/9), DPCP 22% (n=2/9), azathioprine 33% (n=3/9), topical immunotherapy 11% (n=1)
Almutairi et al. (2019) [16]	Open-Label comparative randomized control study	Oral ruxolitinib 20 mg twice daily for 6 months	38	35.5±13.8	55.3% (n=21)	29.6±11.5*	99.8 [45.50-100]	Severe AA with more than 30% scalp hair loss, alopecia totalis and alopecia universalis	47.37% (n=18) failure other treatment within previous 12 months included systemic corticosteroids and other immunosuppressant agents like MTX
		Oral tofacitinib 5 mg twice daily for 6 months	37	47.4±16.1	59.5% (n=22)	31.4±9.7*	99.6[40.37-100]	Severe AA with more than 30% scalp hair loss, alopecia totalis and alopecia universalis	43.24% (n=16) failure other treatment within previous 12 months included systemic corticosteroids and other immunosuppressant agents like MTX
Chen et al. (2019) [17]	Case series	Oral tofacitinib 5 mg daily for 6 months	6	32.8±14	33% (n=2)	7.5±4.66	81.0	Severe AA (>50% scalp hair loss) more than 3 months without evidence of hair regrowth	33% (n=2) TCS , 33% (n=2) intralesional steroid, 50% (n=3) oral steroids, 50% (n=3) pulse steroid.
Craiglow et al. (2019) [18]	Case series	Oral tofacitinib 5 mg twice daily for mean of 8.5 months	4 (all patients < 18 years old)	9±07	25% (n=1)	3.25±1.29	100	NI	75% (n=3/4) prednisone, 100% (n=4/4) TCS, ¼ ustekinumab, intralesional triamcinolone 2/4, 1= Squaris acid dibutylester, phototherapy, platelet-rich plasma, narrowband ultraviolet B phototherapy, minoxidil 5%, 25% (1/4) DPCP, 25% (1/4) cyclosporine, 25% (1/4)

									tacrolimus, 50% (2/4) tretinoin, 25% (1/4) topical tofacitinib,
Dai et al. (2019) [19]	Case series	Oral tofacitinib 2.5 mg once daily for mean of 13 months	3 (all patients <18 years old)	4.33 ±0.47	66% (n=2)	1.7±6.01	100	Severe AA with at least 50% scalp hair loss	100% (n=3/3) TCS and Intralesional steroid injection, 33% (n=1/3) DPCP
Liu et al. (2019) [20]	Case series	OraL ruxolitinib 10 to 25 mg twice daily for mean of 13.9 months	8 (1 patient <18 years old)	26.8±14.2	50% (n=4)	2.9±2.3	93	Severe AA ≥50% scalp hair loss	Tofacitinib 75% (6/8)
Serdaroglu et al. (2019) [21]	Case series	Oral tofacitinib 5 mg twice daily for at least 6 months	63	27 (18-62)	52.4% (n=33)	7 (1-40)	NI	AA involving at least 40% of the scamp surface area	NI
Shin et al. (2019) [22]	Retrospective	Oral tofacitinib 5 mg twice daily for 6 months	18	28 (19-51)	39% (n=7)	8 (2-17)	100	AT or AU with >80% scalp hair loss with total body hair loss	Oral steroid 94% (n=17), oral steroid and cyclosporine 39% (n=7), DPCP 44% (n=8)
Shivanna et al. (2019) [23]	Case series	Oral tofacitinib 5 to 10 mg twice daily for 4 months	6	27.7±5.08	50% (n=3)	8±5.2	98	NI	83% (n=5/6) oral steroids, 33% (n=2) azathioprine, 50% (n=3) cyclosporine.
Cheng et al. (2018) [24]	Case series	Topical 2% tofacitinib twice daily for mean of 7 months	4	42.5±14	75% (n=3)	5.62±3.10	65	Severe AA	100% (n=4) 50% (n=2) ILK, oral tofacitinib 5 mg twice a day and 11 mg extended release twice daily), 50% (n=2) Squaric Acid Dibutylester, 50% (n=2) clobetasol, 50% (n=2) minoxidil, 25% (n=1) acupuncture, contact immunotherapy, drithrocreme and

									anthracycline, 25% (n=1) MTX , oral prednisolone 25% (n=1), latisse 25% (n=1)
		Oral tofacitinib 5 mg once daily to 11 mg extended release twice daily for mean of 14.4 months	11	38.3 ±12.7	27% (n=3)	5.23[3-11]	95.4	Severe AA	73% (n=8/11) ILK, 27% (n=3/11) Squaric Acid Dibutylester, 45% (n=5/11) oral steoids, 54.5% (n=6/11) TCS, 18% (n=2/11) MTX, 18% (n=2/11) tacrolimus, 18% (n=2/11) minoxidil.
Jabbari et al. (2018) [25]	Open-label pilot clinical trial	Oral tofacitinib 5 to 10 mg twice daily for 6-18 months	12	34.67	33% (n=4)	15.9±11	81.3	Moderate to severe AA	NI
Lee et al. (2018) [26]	Retrospective	Oral tofacitinib 10-15 mg daily for at mean of 9.5 month	33	31.2±9.3	48.4% (n=16)	10.8±8.9	100	Moderate-to-severe AA	90% (n=30/33): refractory to oral/topical/intralesional steroid, cyclosporine, cryotherapy, phototherapy, excimer laser, DPCP or herbal medicine. Other 3 had no previous treatment
Liu et al. (2018) [27]	Open label trial	Topical tofacitinib 2% twice daily For 24 weeks	10	36.9±14.2	60% (n=6)	9.4±8.7	77.7	AA with ≥ 2 patches of scalp hair loss or complete scalp hair loss	NI
Patel et al. (2018) [28]	Case series	Oral tofacitinib 5 mg twice a day for 5 months	1 (patient <18 years old)	17	100% (n=1)	4	100	NI	Topical clobetasol and pimecrolimus

		Oral tofacitinib 5-10 mg/d for 1 month	1	40	100% (n=1)	16	100	NI	Tacrolimus, oral 60 mg prednisolone tapering over 6 weeks, prednisolone pulses over 3 months, and oral 10-mg weekly doses of MTX with folic acid supplementation.
Putterman et al. (2018) [29]	Case series	Topical tofacitinib 2% once or twice daily for mean of 32.8 weeks	11 (all patients were <18 years old)	11.45±4.34	18% (n=2)	4.9±2.38	68	NI	Fluocinonide 0.05%: 36% (n=4/11) Clobetasol: 45% (n=5/11) Anthralin: 9% (n=1/11) Mometasone: 18% (n=2/11) Prednisolon failed 15-day of 3 weeks courses of oral prednisolone or prednisolone, as well as class 1 or 2 TCS, 36% (n=4/11) MTX.
Castelo-Soccio et al. (2017) [30]	Case series	Oral tofacitinib 5 mg twice a day for mean of 9 months	8 adolescent (six patients < 18 years old)	15.4±2.23	NI	1[1-10]	100	Severe AA	100% (n=8): failed Oral pulsed steroids, TCS , and topical immunotherapy, 50% (n=4) failed MTX, 20% (n=2) failed hydroxychloroquine and 20% (n=2) failed topical tofacitinib therapy.
Deeb et al. (2017) [31]	Case series	Topical ruxolitinib 0.6% once daily in 2 months and after twice daily for 1.5 months	1	66	0% (n=0)	4	29	Resistant AA	Topical clobetasol, minoxidil 5%, injections with triamcinolone acetonide 5 mg, oral prednisolone, cyclosporine, MTX
Erduran et al. (2017) [32]	Case series	Oral tofacitinib 5 mg twice daily (initial dose) and later	1	23	0% (n=0)	9	100	NI	TCS , intralesional steroid injections, topical minoxidil, systemic steroids, oral cyclosporine.

		15 mg daily for 6 months							
Ibrahim et al. (2017) [33]	Case series	Oral tofacitinib 5 mg twice daily for mean of 6.4 months	13	(Number of patients in their 20s= 2) (Number of patients in their 30s= 2) (Number of patients in their 40s= 1) (Number of patients in their 50s= 7) (Number of patients in their 60s= 1)	7.7% (n=1)	3.3±2.3	92.70	NI	100% (n=13/13) TCS, 84% (n=11/13) ILC, 23% (n=3/13) MTX, 69% (n=9/13) Minoxidil, 84% (n=11/13) DPCP, 23% (n=3/13) anthralin, 8% (n=1/13) squaric acid dibutylester, 8% (n=1/13) laser
Liu et al. (2017) [34]	Retrospective	Oral tofacitinib 5 mg twice a day alone or with prednisolone 300 mg once monthly over 4 to 18 months	90	34.5 (18-70)	44.4% (n=40)	18 (2-54)	NI	AA with at least 40% scalp hair loss	NI
Park et al. (2017) [35]	Case series	Oral tofacitinib for median total of 2065 mg for 7.5 months	32	30 (18-54)	Sex ratio, female:male 6;16.	8 (1-15)	99.5	AA with >30% hair loss	91% (n=26) refractory to previous oral steroid and cyclosporine.

Crispin et al. (2016) [36]	Open-label single-arm trial	Oral tofacitinib 5 mg twice daily for 3 months	66	37 (19-65)	53% (n=35)	5 (0.5-43)	NI	AA >50% scalp hair loss	NI
Wiggan et al. (2016) [37]	Open-label clinical trial	Oral ruxolitinib 20 mg twice daily for 3-6 months	12	43.67 (14.41)	42% (n=5/12)	NI	65.63	Moderate-to-severe AA	NI

*Duration of alopecia described per months.
AA= alopecia areata; AU= alopecia universalis; AT= alopecia totalis; SALT= severity of alopecia tool; JAK= Janus Kinase Inhibitors; TCS= topical corticosteroid; ILK= optimal intralesional kenalog, MTX= methotrexate; DPCP= diphenylcyclopropenone; NI= non-mentioned.

Reference:

1: Benton S, Farah R, Freese R, Hordinsky M. Tofacitinib as a pragmatic treatment choice for alopecia areata: A retrospective review. Dermatol Ther. 2022;35(4):e15310. https://doi: 10.1111/dth.15310.

2: King B, Mesinkovska N, Mirmirani P, Bruce S, Kempers S, Guttman-Yassky E, Roberts JL, McMichael A, Colavincenzo M, Hamilton C, Braman V, Cassella JV. Phase 2 randomized, dose-ranging trial of CTP-543, a selective Janus Kinase inhibitor, in moderate-to-severe alopecia areata. J Am Acad Dermatol. 2022;87(2):306-313. https://doi: 10.1016/j.jaad.2022.03.045.

3: King B, Ohyama M, Kwon O, Zlotogorski A, Ko J, Mesinkovska NA, Hordinsky M, Dutronc Y, Wu WS, McCollam J, Chiasserini C, Yu G, Stanley S, Holzwarth K, DeLozier AM, Sinclair R; BRAVE-AA Investigators. Two Phase 3 Trials of Baricitinib for Alopecia Areata. N Engl J Med. 20225;386(18):1687-1699. https://doi: 10.1056/NEJMoa2110343.

4: Mikhaylov D, Glickman JW, Del Duca E, Nia J, Hashim P, Singer GK, Posligua AL, Florek AG, Ibler E, Hagstrom EL, Estrada Y, Rangel SM, Colavincenzo M, Paller AS, Guttman-Yassky E. A phase 2a randomized vehicle-controlled multi-center study of the safety and efficacy of delgocitinib in subjects with moderate-to-severe alopecia areata. Arch Dermatol Res. 2022;1. https://doi: 10.1007/s00403-022-02336-0

5: Guttman-Yassky E, Pavel AB, Diaz A, Zhang N, Del Duca E, Estrada Y, King B, Banerjee A, Banfield C, Cox LA, Dowty ME, Page K, Vincent MS, Zhang W, Zhu L, Peeva E. Ritlecitinib and brepocitinib demonstrate significant improvement in scalp alopecia areata biomarkers. J Allergy Clin Immunol. 2022;149(4):1318-1328. https://doi: 10.1016/j.jaci.2021.10.036

6: Esteves M, Lopes S, Azevedo F, Pedrosa A. Effectiveness of Oral Tofacitinib Dose Tapering in a Case of Alopecia Areata Universalis. Skin Appendage Disord. 2021;7(1):36-40. https://doi: 10.1159/000510673.

7: Jerjen R, Meah N, Trindade de Carvalho L, Wall D, Eisman S, Sinclair R. Treatment of alopecia areata in pre-adolescent children with oral tofacitinib: A retrospective study. Pediatr Dermatol. 2021;38(1):103-108. https://doi: 10.1111/pde.14422

8: Lai VWY, Bokhari L, Sinclair R. Sublingual tofacitinib for alopecia areata: a roll-over pilot clinical trial and analysis of pharmacokinetics. Int J Dermatol. 2021;60(9):1135-1139. https://doi: 10.1111/ijd.15657.

9: King B, Guttman-Yassky E, Peeva E, Banerjee A, Sinclair R, Pavel AB, Zhu L, Cox LA, Craiglow B, Chen L, Banfield C, Page K, Zhang W, Vincent MS. A phase 2a randomized, placebo-controlled study to evaluate the efficacy and safety of the oral Janus kinase inhibitors ritlecitinib and brepocitinib in alopecia areata: 24-week results. J Am Acad Dermatol. 2021;85(2):379-387. https://doi: 10.1016/j.jaad.2021.03.050.

10: King B, Ko J, Forman S, Ohyama M, Mesinkovska N, Yu G, McCollam J, Gamalo M, Janes J, Edson-Heredia E, Holzwarth K, Dutronc Y. Efficacy and safety of the oral Janus kinase inhibitor baricitinib in the treatment of adults with alopecia areata: Phase 2 results from a randomized controlled study. J Am Acad Dermatol. 2021;85(4):847-853. https://doi: 10.1016/j.jaad.2021.05.050.

11: Dincer Rota D, Emeksiz MAC, Erdogan FG, Yildirim D. Experience with oral tofacitinib in severe alopecia areata with different clinical responses. J Cosmet Dermatol. 2021 Sep;20(9):3026-3033. https://doi: 10.1111/jocd.13966.

12: Wambier CG, Craiglow BG, King BA. Combination tofacitinib and oral minoxidil treatment for severe alopecia areata. J Am Acad Dermatol. 2021;85(3):743-745. https://doi: 10.1016/j.jaad.2019.08.080.

13: Kerkemeyer KLS, John JM, Sinclair R, Bhoyrul B. Response of alopecia areata of the beard to oral tofacitinib. J Am Acad Dermatol. 2020;82(5):1228-1230. https://doi: 10.1016/j.jaad.2019.10.058.

14: Yale K, Pourang A, Plikus MV, Mesinkovska NA. At the crossroads of 2 alopecias: Androgenetic alopecia pattern of hair regrowth in patients with alopecia areata treated with oral Janus kinase inhibitors. JAAD Case Rep. 2020;6(5):444-446. https://doi: 10.1016/j.jdcr.2020.02.026.

15: Akdogan N, Ersoy-Evans S, Doğan S, Atakan N. Experience with oral tofacitinib in two adolescents and seven adults with alopecia areata. Dermatol Ther. 2019;32(6):e13118. https://doi: 10.1111/dth.13118.

16: Almutairi N, Nour TM, Hussain NH. Janus Kinase Inhibitors for the Treatment of Severe Alopecia Areata: An Open-Label Comparative Study. Dermatology. 2019;235(2):130-136. doi: 10.1159/000494613.

17: Chen YY, Lin SY, Chen YC, Yang CC, Lan CE. Low-dose tofacitinib for treating patients with severe alopecia areata: an efficient and cost-saving regimen. Eur J Dermatol. 2019;29(6):667-669. https://doi: 10.1684/ejd.2019.3668.

18: Craiglow BG, King BA. Tofacitinib for the treatment of alopecia areata in preadolescent children. J Am Acad Dermatol. 2019;80(2):568-570. https://doi: 10.1016/j.jaad.2018.08.041.

19: Dai YX, Chen CC. Tofacitinib therapy for children with severe alopecia areata. J Am Acad Dermatol. 2019;80(4):1164-1166. https://doi: 10.1016/j.jaad.2018.12.041.

20: Liu LY, King BA. Ruxolitinib for the treatment of severe alopecia areata. J Am Acad Dermatol. 2019;80(2):566-568. https://doi: 10.1016/j.jaad.2018.08.040.

21: Serdaroğlu S, Engin B, Çelik U, Erkan E, Aşkın Ö, Oba Ç, Kutlubay Z. Clinical experiences on alopecia areata treatment with tofacitinib: A study of 63 patients. Dermatol Ther. 2019;32(3):e12844. https://doi: 10.1111/dth.12844.

22: Shin JW, Huh CH, Kim MW, Lee JS, Kwon O, Cho S, Park HS. Comparison of the Treatment Outcome of Oral Tofacitinib with Other Conventional Therapies in Refractory Alopecia Totalis and Universalis: A Retrospective Study. Acta Derm Venereol. 2019;99(1):41-46. https://doi: 10.2340/00015555-3057.

23: Shivanna CB, Shenoy C, Priya RA. Tofacitinib (Selective Janus Kinase Inhibitor 1 and 3): A Promising Therapy for the Treatment of Alopecia Areata: A Case Report of Six Patients. Int J Trichology. 2018 May;10(3):103-107. https://doi: 10.4103/ijt.ijt_21_18

24: Cheng MW, Kehl A, Worswick S, Goh C. Successful Treatment of Severe Alopecia Areata With Oral or Topical Tofacitinib. J Drugs Dermatol. 2018;17(7):800-803

25: Jabbari A, Sansaricq F, Cerise J, Chen JC, Bitterman A, Ulerio G, Borbon J, Clynes R, Christiano AM, Mackay-Wiggan J. An Open-Label Pilot Study to Evaluate the Efficacy of Tofacitinib in Moderate to Severe Patch-Type Alopecia Areata, Totalis, and Universalis. J Invest Dermatol. 2018 Jul;138(7):1539-1545. https://doi: 10.1016/j.jid.2018.01.032.

26: Lee JS, Huh CH, Kwon O, Yoon HS, Cho S, Park HS. Nail involvement in patients with moderate-to-severe alopecia areata treated with oral tofacitinib. J Dermatolog Treat. 2018;29(8):819-822. https://doi: 10.1080/09546634.2018.1466024.

27: Liu LY, Craiglow BG, King BA. Tofacitinib 2% ointment, a topical Janus kinase inhibitor, for the treatment of alopecia areata: A pilot study of 10 patients. J Am Acad Dermatol. 2018;78(2):403-404.e1. https://doi: 10.1016/j.jaad.2017.10.043.

28: Patel NU, Oussedik E, Grammenos A, Pichardo-Geisinger R. A Case Report Highlighting the Effective Treatment of Alopecia Universalis With Tofacitinib in an Adolescent and Adult Patient. J Cutan Med Surg. 2018;22(4):439-442. https://doi: 10.1177/1203475418760512.

29: Putterman E, Castelo-Soccio L. Topical 2% tofacitinib for children with alopecia areata, alopecia totalis, and alopecia universalis. J Am Acad Dermatol. 2018;78(6):1207-1209.e1. https://doi: 10.1016/j.jaad.2018.02.031.

30: Castelo-Soccio L. Experience with oral tofacitinib in 8 adolescent patients with alopecia universalis. J Am Acad Dermatol. 2017;76(4):754-755. https://doi: 10.1016/j.jaad.2016.11.038

31: Deeb M, Beach RA. A Case of Topical Ruxolitinib Treatment Failure in Alopecia Areata. J Cutan Med Surg. 2017 Nov/Dec;21(6):562-563. https://doi: 10.1177/1203475417716363.

32: Erduran F, Adışen E, Aksakal AB. Excellent response to tofacitinib treatment in a patient with alopecia universalis. Acta Dermatovenerol Alp Pannonica Adriat. 2017;26(2):47-49. https://doi: 10.15570/actaapa.2017.15.

33: Ibrahim O, Bayart CB, Hogan S, Piliang M, Bergfeld WF. Treatment of Alopecia Areata With Tofacitinib. JAMA Dermatol. 2017 Jun 1;153(6):600-602. https://doi: 10.1001/jamadermatol.2017.0001

34: Liu LY, Craiglow BG, Dai F, King BA. Tofacitinib for the treatment of severe alopecia areata and variants: A study of 90 patients. J Am Acad Dermatol. 2017;76(1):22-28. https://doi: 10.1016/j.jaad.2016.09.007.

35: Park HS, Kim MW, Lee JS, Yoon HS, Huh CH, Kwon O, Cho S. Oral tofacitinib monotherapy in Korean patients with refractory moderate-to-severe alopecia areata: A case series. J Am Acad Dermatol. 2017;77(5):978-980. https://doi: 10.1016/j.jaad.2017.06.027.

36: Kennedy Crispin M, Ko JM, Craiglow BG, Li S, Shankar G, Urban JR, Chen JC, Cerise JE, Jabbari A, Winge MC, Marinkovich MP, Christiano AM, Oro AE, King BA. Safety and efficacy of the JAK inhibitor tofacitinib citrate in patients with alopecia areata. JCI Insight. 2016 22;1(15):e89776. https://doi: 10.1172/jci.insight.89776.

37: Mackay-Wiggan J, Jabbari A, Nguyen N, Cerise JE, Clark C, Ulerio G, Furniss M, Vaughan R, Christiano AM, Clynes R. Oral ruxolitinib induces hair regrowth in patients with moderate-to-severe alopecia areata. JCI Insight. 2016;1(15):e89790. https://doi: 10.1172/jci.insight.89790.

Supplemental Table 2: The characteristics and outcomes of included studies investigating JAK inhibitors treatment for alopecia areata

Reference	Medication and dose	Proportion achieving 30 %, 50%, 75%, 90% or 100% in SALT score, or achieving complete, partial or no response % (n)	SALT score at end of study compared to baseline	Percent change in SALT score (mean± SD or median [range]))	Relapse rate	Concurrent treatment?	Type of alopecia	Control group
Benton et al. (2022) [1]	Oral Tofacitinib 5 mg twice daily for 6 months	32.3% (n=10) almost complete or fully completed scalp regrowth confirmered by EMR photos. 51.6% (n=16) experienced improvement of regrowth from	-	-	6.5 % (n=2)	-	AT/AU = 48.6% (n=17) Extensive patchy= 40.0% (n=14) Ophiasis= 8.6% (n=3)	No control group

		baseline, but less than almost complete (moderate). 16.1% (n=5) had no response to treatment.					Diffuse= 2.9% (n=1)	
King et al. (2022) [2]	Oral CTP-543 (deuruxolitinib) 4 mg twice daily for 24 weeks	21% (n=6) achieved $SALT^{50}$. 14% (n=4) achieved $SALT^{75}$.	-	-	-	-	AA=53.3% (n=16) AT= 6.7% (n=2) AU=40.0% (n=12)	Placebo
	Oral CTP-543 (deuruxolitinib) 8 mg twice daily for 24 weeks	47% (n=18) achieved $SALT^{50}$. 29% (n=11) achieved $SALT^{75}$. 16% (n=6) achieved $SALT^{90}$.					AA=42.1% (n=16) AO=5.3% (n=2) AT= 15.8% (n=6) AU=36.8% (n=14)	Placebo
	Oral CTP-543 (deuruxolitinib) 12 mg twice daily for 24 weeks	58% (n=21) achieved $SALT^{50}$. 42% (n=15) achieved $SALT^{75}$. 36% (n=13) achieved $SALT^{90}$.					AA=43.2% (n=16) AO=8.1% (n=3) AT= 21.6% (n=8) AU= 27% (n=10)	Placebo
King et al. (2022) [3]	BRAVE-AA1: Oral Baricitinib 2 mg once daily for 36 weeks	30.4% (n=56) achieved $SALT^{50}$. 19.0% (n=35) achieved $SALT^{75}$. 3.8% (n=7) achieved $SALT^{90}$.	-	32.7±3.1	-	Yes (Treatment with finasteride (or other 5 alfa-reductase inhibitors) was allowed.)	AU= 45.1% (n=83) No information about the rest	Placebo
	BRAVE-AA1: Oral Baricitinib 4 mg once daily for 36 weeks	46.3% (n=130) achieved $SALT^{50}$. 33.8% (n=95) achieved $SALT^{75}$. 14.2% (n=40) achieved $SALT^{90}$.		47.1±2.7			AU=45.2% (n=127) No information about the rest	Placebo
	BRAVE-AA2: Oral Baricitinib			29.9±2.8			AU= 44.9% (n=70)	Placebo

	2 mg once daily for 36 weeks	28.2% (n=44) achieved $SALT^{50}$. 16.7% (n=26) achieved $SALT^{75}$. 7.7% (n=12) achieved $SALT^{90}$.					No information about the rest	
	BRAVE-AA2: Oral Baricitinib 4 mg once daily for 36 weeks	47.0% (n=110) achieved $SALT^{50}$. 32.1% (n=75) achieved $SALT^{75}$. 16.7% (n=39) achieved $SALT^{90}$.		48.7±2.6			AU= 47.4% (n=111) No information about the rest	Placebo
Mikhaylov et al. (2022) [4]	Topical delgocitinib 30 mg/g twice daily for 12 weeks	50% (n=10) had improvement in SALT score, ranging from 0.4 to 69.1%, with 20% of those patients (n=2) achieving over 50% of SALT improvement. 20% (n=4) had no change from their baseline SALT score, and 15% (n=3) had clinical worsening of AA by 6.5%, 16.1%, and 21.75% increase in SALT scores compared to baseline.	-	-	15% (n=3)	-	AA= 70% (n=14/20) AT= 0.5% (n=1/20) AU= 0.25% (n=5/20)	Vehicle
Yassky et al. (2022) [5]	Ritlecitinib 200 mg once daily for 4 weeks intially and later 50 mg once daily for 24 weeks	33% (n=6) achieved $SALT_{30.}$ 28% (n=5) achieved $SALT_{50}$. 17% (n=3) achieved $SALT_{75}$. 17% (n=3) achieved $SALT_{90}$. 11% (n=2) achieved $SALT_{100}$.	-	24.9%	-	-	78% (n=14) AT or AU No information about the rest	Placebo
	Brepocitinib 60 mg once daily	69% (n=11) achieved $SALT_{30.}$	-	38.8%	-	-		Placebo

	for 4 weeks initially and later 30 mg once daily for 24 weeks	38% (n=6) achieved $SALT_{50}$. 31% (n=5) achieved $SALT_{75}$. 13% (n=2) achieved $SALT_{90}$. 6% (n=1) achieved $SALT_{100}$.					69% (n=11) AT or AU	
Esteves et al. (2021) [6]	Oral tofacitinib 5 mg twice daily for 8 months. Later, only 5 mg daily at once for 5 months, and at the end 5 mg twice weekly at the latest follow-up	100% (n=1) $SALT_{90}$	(100-4)	96%	-	Yes (minoxidil)	AU	No control group
Jerjen et al. (2021) [7]	Oral tofacitinib 2.5-7.5 mg daily with a median treatment during of 9 months	44% (n=4/9) experienced improvement in SALT score, ranging from 76-100%. 63.6% (n=3/9) had improvement ranging from 51-75%. 11% (n=1/9) had improvement between 26-50% in SALT score. 11% (n=1/9) had improvement ranging from 5-25% in SALT score.	-	67.8% (among nine responders)	-	Yes (minoxidil, clarithromycin and topical steroids)	Patchy AA= 43% (n=6) Diffuse AA= 7% (n=1) AT: 29% (n=4) AU: 14% (n=2) Eyebrow only: 7% (n=1)	No control group
Lai et al. (2021) [8]	Sublingual tofacitinib 5 mg twice daily for 12 months	6.25% (n=1/16) experienced high improvement in SALT score, ranging from 75-100%.	-	15.6%	-	-	AT= 33.33% (n=6) AU= 38.89% (n=7)	Cyclosporine/placebo

		6.25% (n=1/6) had improvement between 50-75%. 6.25% (n=1/16) had improvement ranging from 30-49%. 18.7% (n=3/16) had improvement between 15-29%.					Patchy= 27.78% (n=5)	
King et al. a(2021) [9]	Oral ritlecitinib 200 mg once daily for 4 weeks, and then 50 mg once daily for 20 weeks	50% (n=24) achieved $SALT_{30}$. 35% (n=17) achieved $SALT_{50}$. 27% (n=13) achieved $SALT_{75}$ 25% (n=12) achieved $SALT^{90}$. 5% (n=2) achieved $SALT_{100}$. 30% (n=13) experienced no change and/or further loss. 14% (n=6) had 100% extent of regrowth, 18% (n=8) experienced regrowth, ranging from 75-99% and 11% (n=5) experienced regrowth ranging from 50-74%.	-	31.1%	-	-	AT: 15% (n=7) AU: 27% (n=13)	Placebo
	Oral brepocitinib 60 mg once daily for 4 weeks then 30 mg once daily for 20 weeks	64% (n=30) achieved $SALT^{30}$. 50% (n=23) achieved $SALT_{50}$. 41% (n=19) achieved $SALT_{75}$. 34% (n=16) achieved $SALT^{90}$. 13% (n=6) achieved $SALT_{100}$.		49.2%			AT:17% (n=8) AU: 30% (n=14)	Placebo

		10% (n=4) experienced no change and/or further loos. 18% (n=7) experienced 100% regrowth, 33% (n=13) experienced regrowth ranging from 75-99%, and 13% (n=5) experienced regrowth ranging from 50-74%.						
King et al. (2021) [10]	Oral baricitinib 1 mg once daily for 36 weeks	-	-	-	-	Yes (topical corticosteroids) were permitted except on the scalp, eyebrows, and eyelids. Oral or topical minoxidil was allowed, provided)	AA	Placebo
	Oral baricitnib 2 mg once daily 36 weeks	48.1% (n=13) achieved $SALT_{50}$. 29.6% (n=8) achieved $SALT_{75}$. 18.5% (n=5) achieved $SALT_{90}$. 11.1% (n=3) achieved $SALT_{100}$.		48.2%			AA	Placebo
	Oral baricitinib 4 mg once daily 36 weeks	66.7% (n=18) achieved $SALT_{50}$. 48.1% (n=13) achieved $SALT_{75}$. 40.7% (n=11) achieved $SALT_{90}$. 25.9% (n=7) achieved $SALT_{100}$.		58.1%			AA	Placebo
Rota et al. (2021) [11]	Oral tofacitinib 10 mg once daily for mean of 12 months	54% (n=7/13) had improvement in SALT score ranging from <95% to >0% 7.7% (n=1/13) had improvement ≥95%	(75-8) (65-5) (100-38) (100-100) (100-90) (88-20) (100-40) (100-25) (100-100) (45-0)	-	38% (n=5/13)	Yes (minoxidil for only one patient)	23% (n=3) recalcitrant AA 77% (n=10) recalcitrant AU	No control group

		38.5% (n=5/13) had no improvement in SALT score compared to baseline	(100-100) (100-100) (100_100)					
Wambier et al. (2021) [12]	Oral tofacitinib 5-10 mg twice daily for 3 months	At **3 months**: 75% (n=9/12) had improvement ranging from <95% and >0% 25% (n=3) had no response to treatment. At **6-9 months**: 50% (n=6/12) had improvement ranging from <95% and >0% 50% (n=6/12) had improvement ≥ 95%	At 3 months: (100-90) (100-100) (85-50) (100-100) (100-85) (79-35) (66-24) (100-17) (99-99) (86-10) (100-95) (82-11) At 6-9 months: (100-3) (100-33) (82-20) (100-34) (100-0) (79-0) (66-2) (100-0) (99-55) (86-10) (100-80) (82-0)	-	-	Yes (minoxidil)	AA	No control group
Kerkemeyer et al. (2020) [13]	Oral tofacitinib 7.2 ± 4.0 mg for at mean of 15.5 months	Overall, 60% (n=27) of men who achieved complete beard regrowth also achieved complete scalp hair regrowth. Of the 19 patients with partial beard regrowth, 79% (n=15) achieved partial and 5% (n=1/19) achieved complete	-	41.7%	-	-	Solitary patch: 13.3% (n=6) Multiple Patches: 28.9% (n=13) Diffuse: 17.8% (n=8)	No control group

		scalp hair regrowth. Of the 16 patients with no beard regrowth, 87.5% (n=14) had no regrowth and 12.5% (n=2) had partial regrowth of scalp hair. (partial and complete response defined according to the author of this study)					AT: 8.9% (n=4) AU: 31.1% (n=14) BAA Subtype: Solitary patch: 4.5% (n=2) Multiple patches: 53.3% (n=24) Total beard loss: 42.2% (n=19)	
Yale et al (2020) [14]	Oral unknown JAK inhibitor for 24-40 weeks	100% (n=4) had improvement in SALT score, ranging between <95% and >0%	(100-49) (99.7-16) (71.8-44) (100-40)	-	-	-	AA	No control group
Akdogan et al. (2019) [15]	Oral tofacitinib 10 mg/day for 6 months (n=8 patients) or 7.5 mg/day for 6 months (n=1 patient).	66.6% (n=6/9) had improvement ranging from <95% and >0% 33.3% (n=3/9) had no response to the treatment	(76-95) (100-65) (97-55) (85-70) (68-6) (100-96) (100-80) (100-100) (100-100)	23.5±28	-	-	AA: 44% (n=4) AU: 56% (n=5)	No control group
Almutairi et al. (2019) [16]	Oral ruxolitinib 20 mg twice daily for 6 months	21% (n=8) had complete regrowth defined as 100%. 47.4% (n=18) had regrowth between 75-99%. 15.8% (n=6) had regrowth between 50-74%. 7.9% (n=3) had regrowth between 25-49%.	-	93.8±3.2	73.7% (n=28)	-	Multifocal alopeci: 47.7% (n=18) AT: 31.5% (n=12) AU: 21.05% (n=8)	Tofacitinib

		7.9% (n=3) had regrowth between 0-24%.						
	Oral tofacitinib 5 mg twice daily for 6 months	21% (n=8) had complete regrowth defined as 100%. 43.2% (n=16) had regrowth between 75-99%. 13.5% (n=5) had regrowth between 50-74%. 10.8% (n=4) had regrowth between 25-49%. 10.8% (n=4) had regrowth between 0-24%.		95.2± 2.7	70.3% (n=26)		Multifocal alopeci: 40.54% 40.54% (n=15) AT: 27.02% (n=13) AU:24.33% (n=9)	Ruxolitinib
Chen et al. (2019) [17]	Oral tofacitinib 5 mg daily for 24 weeks	16.7% (n=1) had improvement >95%. 66.6% (n=4) had improvement ranging from <95% and >0%. 16.7% (n=1) had no response to treatment.	(55.2-20.4) (100-91) (78.4-36.2) (100-100) (100-22) (52.2-0)	50.6	16.6% (n=1/6)	-	AA	No control group
Craiglow et al. (2019) [18]	Oral tofacitinib 5 mg twice daily for mean of 8.5 months	50% (n=2) had improvement ≥95%. 50% (n=2) had improvement between <95% and >0%.	(100-0) (100-99) (100-0) (100-38)	-	-	-	AU=75% (n=3/4) and AT= 25% (n=1)	No control group
Dai et al. (2019) [19]	Oral tofacitinib 2.5 mg once daily for mean of 13 months	100% (n=3) had improvement between <95% and >0%.	(100-50) (100-6) (100-41)	-	-	-	AT= 67% (n=2/3) AU= 33% (n=1/3)	No control group

Liu et al. (2019) [20]	Oral ruxolitinib 10 to 25 mg twice daily for mean of 13.9 months	50% (n=4/8) had improvement ≥95%. 12.5% (n=1/8) had improvement between <95% and >0%. 25% (n=2/8) had no response to treatment. 12.5% (n=1) experienced further loss despite treatment.	(100-1) (100-0) (100-0) (50-0.5) (100-9) (100-100) (94-94) (100-250)	-	-	-	AT/AU= 75% (n=6/8=) AA= 25% (n=2/8)	No control group
Serdaroglu et al. (2019) [21]	Oral tofacitinib 5 mg twice daily for at least 6 months	40% (n=25) experienced regrowth >90%. 43% (n=27) experienced regrowth between 50-90%. 13% (n=8) experienced regrowth between 5-50%. 5% (n=3) did not respond to treatment. 3% (n=2) experienced loss of regrowth.	-	88%	-	-	AA: 22.2% (n=14) AT: 4.8% (n=3) AU: 73% (n=46)	No control group
Shin et al. (2019) [22]	Oral tofacitinib 5 mg twice daily for 6 months	11.1% (n=2) experienced hair regrowth >90%. 44.4% (n=8) experienced hair regrowth > 50% 83.7% (n=15) experienced hair regrowth >5%.	-	-	-	-	AT: 44.4% (n=8) AU: 55.6% (n=10/18)	Conventional oral treatment (steroid± cyclosporine) or diphenylcyclopropenone (DPCP)
Shivanna et al. (2019) [23]	Oral tofacitinib 5 to 10 mg twice daily for 4 months	Initial SALT score (%) median; mean (range): 77.9%; 98% (0-100) Latest SALT score (%)	-	25.5% (mean score after 4 month)	16.7% (n=1)	-	AU: 83% (n=5) AT: 17% (n=1)	No control group

		Median; mean (range): 25.5%; 12.05% (0-100)						
Cheng et al. (2018) [24]	Topical 2% tofacitinib twice daily for mean of 7 months	33.3% (n=1) experienced improvement between <95% and >0%. 33.3% (n=1) experienced no responds. 33.3% (n=1) experienced further loss despite treatment.	(75-6.70) (100-100) (20-99) No data regarding last patient	-	-	Yes (methotrexate and prednisolone for).	AAU	No control group
	Oral tofacitinib 5 mg once daily to 11 mg extended release twice daily for mean of 14.4 months	60% (n=6) experienced improvement ≥ 95%. 20% (n=2) experienced improvement between <95% and >0%. 20% (n=2) had no responds.	(50-5) (100-0) (100-100) (100-5) (100-5) (100-12) (100-100) (100-0) (100-5) (100-0) No data regarding last patient	61.18%		-	AAU= (n=10) AAT= (n=1)	No control group
Jabbari et al. (2018) [25]	Oral tofacitinib 5 to 10 mg twice daily for 6-18 months	9% (n=1) experienced improvement ≥ 95%. 45.5% (n=5) experienced improvement between <95% and >0%. 45.5% (n=5) experienced further loss despite treatment.	(100-85) (46-76.1) (49-61.2) (84-100) (100-1) (58-13.8) (100-50) (92-13) (52-94.2) (100-79) (50-87)	-	-	-	No information about distribution of AA, AU and AT	No control group
Lee et al. (2018) [26]	Oral tofacitinib 10-15 mg daily for mean of 9.5 month	-	-	60.5%	-	-	AA	No control group

Liu et al. (2018) [27]	Topical Tofacitinib 2% twice daily For 24 weeks	100% (n=3) had improvement between <95% and >0%.	Responders (n=3) SALT: (100-39) (17-14) (40-30)	10%	-	-	AA	No control group
Patel et al. (2018) [28]	Oral tofacitinib 5 mg twice a day for 5 months	100% (n=1) had improvement between <95% and >0%.	(100-15)	(85% change in SALT score)	-	-	AA	No control group
	Oral tofacitinib 5-10 mg/d for 1 month	100% (n=1) had improvement between <95% and >0%.	(100-10)	(90% change in SALT score)			AA	No control group
Putterman et al. (2018) [29]	Topical tofacitinib 2% once or twice daily for mean of 32.8 weeks	9% (n=1/11) experienced improvement ≥95%. 63.6% (n=7/11) experienced improvement between <95% and >0%. 18% (n=2/11) had no responds. 9% (n=1/11) experienced further loss despite treatment.	(100-83) (70-80) (100-100) (100-10.5) (15-10) (100-10) (87-61) (96-4) (77-53) (80-80) (100-78.5)	32.3%	-	-	AU: 54% (n=6) AA: 9% (n=1) AT: 36% (n=4)	No control group
Castelo-Soccio et al. (2017) [30]	Oral tofacitinib 5 mg twice a day for mean of 9 months	100% (n=8/8) had improvement between <95% and >0%.	(100-38) (100-42) (100-43) (100-35) (100-21) (100-48) (100-25) (100-36)	64%	-	-	AU= 100% (n=8)	No control group
Deeb et al. (2017) [31]	Topical ruxolitinib (0.6%) once daily in 2 months and after twice daily for 1.5 months	100% (n=1) had improvement between <95% and >0%.	(100-27)	-	-	Yes (methotrexate)	AA	No control group

Erduran et al. (2017) [32]	Oral tofacitinib 5 mg twice daily (initial dose) and later 15 mg daily for 6 months	100% (n=1) had improvement ≥ 95%.	(100-0)	-	-	-	AU	No control group
Ibrahim et al. (2017) [33]	Oral tofacitinib 5 mg twice daily for 6.4 months average	92.8% (n=13/14) had improvement between <95% and >0%. 7.1% (n=1/14) had no responds.	(100-90) (100-100) (100-98) (100-NA) (79.30-40.0) (78.30-39.60) (100-10) (100-40.10) (71.60-35) (100-30.80) (76-15.0) (100-30.80) (76-15.0) (100-35.40) (100-95)	-	-	-	AU = 54% (n=7/13) AT= 7.7% (n=1/13) No information about rest	No control group
Liu et al. (2017) [34]	Oral tofacitinib 5 mg twice a day alone or with prednisolone 300 mg once monthly over 4 to 18 months	20% (n=13) had improvement >90%. 38.4% (n=25) had improvement between 51-90%. 18.5% (n=12) had improvement between 6-50%. 23.1% (n=15) had improvement <5%.	-	64.7% (10-88)	-	-	AA: 14.4% (13/90) AT: 2.2% (2/90) AU: 83.3% (75/90)	No control group
Park et al. (2017) [35]	Oral tofacitinib median of 2065 mg for 7.5 months	75% (n=24) exhibited >5% hair regrowth. 19% (n=6) exhibited hair regrowth between 5-50%.	-	-	-	-	AA= 34.4% (n=11/32) AT= 31.2% (n=10/32)	No control group

		28% (n=9) exhibited hair regrowth between 50-90%. 28% (n=9) exhibited hair regrowth >90 %. 25% (n=8) had no responds. 28.1% (n=9) achieved $SALT_{90}$. 56.3% (n=18) achieved $SALT_{50}$.					AU= 34.4% (n=11/32)	
Crispin et al. (2016) [36]	Oral tofacitinib 5 mg twice daily for 3 months	32% (n=21) had improvement >50%. 32% (n=21) had improvement between 5 and 50%. 36% (n=24) had improvement less than 5%.	-	21%	-	All responders began losing hair again approximately 2m months after stopping the medication	AA: 16.7% (n=11) Ophiasis: 4.6% (n=3) AT: 7.6% (n=6) AU: 71.2 (n=46)	No control group
Wiggan et al. (2016) [37]	Oral Ruxolitinib 20 mg twice daily for 3-6 months	75% (n=9/12) achieved at least 50% regrowth.	(65.6-21.7)	43.9%	-	-	AA	No control group

AA= alopecia areata; AU= alopecia universalis; AT= alopecia totalis; SALT=The Severity of Alopecia Areata; _ = data not reported in the article.

Reference:

1: Benton S, Farah R, Freese R, Hordinsky M. Tofacitinib as a pragmatic treatment choice for alopecia areata: A retrospective review. Dermatol Ther. 2022;35(4):e15310. https://doi: 10.1111/dth.15310.

2: King B, Mesinkovska N, Mirmirani P, Bruce S, Kempers S, Guttman-Yassky E, Roberts JL, McMichael A, Colavincenzo M, Hamilton C, Braman V, Cassella JV. Phase 2 randomized, dose-ranging trial of CTP-543, a selective Janus Kinase inhibitor, in moderate-to-severe alopecia areata. J Am Acad Dermatol. 2022;87(2):306-313. https://doi: 10.1016/j.jaad.2022.03.045.

3: King B, Ohyama M, Kwon O, Zlotogorski A, Ko J, Mesinkovska NA, Hordinsky M, Dutronc Y, Wu WS, McCollam J, Chiasserini C, Yu G, Stanley S, Holzwarth K, DeLozier AM, Sinclair R; BRAVE-AA Investigators. Two Phase 3 Trials of Baricitinib for Alopecia Areata. N Engl J Med. 20225;386(18):1687-1699. https://doi: 10.1056/NEJMoa2110343.

4: Mikhaylov D, Glickman JW, Del Duca E, Nia J, Hashim P, Singer GK, Posligua AL, Florek AG, Ibler E, Hagstrom EL, Estrada Y, Rangel SM, Colavincenzo M, Paller AS, Guttman-Yassky E. A phase 2a randomized vehicle-controlled multi-center study of the safety and efficacy of delgocitinib in subjects with moderate-to-severe alopecia areata. Arch Dermatol Res. 2022;1. https://doi: 10.1007/s00403-022-02336-0

5: Guttman-Yassky E, Pavel AB, Diaz A, Zhang N, Del Duca E, Estrada Y, King B, Banerjee A, Banfield C, Cox LA, Dowty ME, Page K, Vincent MS, Zhang W, Zhu L, Peeva E. Ritlecitinib and brepocitinib demonstrate significant improvement in scalp alopecia areata biomarkers. J Allergy Clin Immunol. 2022;149(4):1318-1328. https://doi: 10.1016/j.jaci.2021.10.036

6: Esteves M, Lopes S, Azevedo F, Pedrosa A. Effectiveness of Oral Tofacitinib Dose Tapering in a Case of Alopecia Areata Universalis. Skin Appendage Disord. 2021;7(1):36-40. https://doi: 10.1159/000510673.

7: Jerjen R, Meah N, Trindade de Carvalho L, Wall D, Eisman S, Sinclair R. Treatment of alopecia areata in pre-adolescent children with oral tofacitinib: A retrospective study. Pediatr Dermatol. 2021;38(1):103-108. https://doi: 10.1111/pde.14422

8: Lai VWY, Bokhari L, Sinclair R. Sublingual tofacitinib for alopecia areata: a roll-over pilot clinical trial and analysis of pharmacokinetics. Int J Dermatol. 2021;60(9):1135-1139. https://doi: 10.1111/ijd.15657.

9: King B, Guttman-Yassky E, Peeva E, Banerjee A, Sinclair R, Pavel AB, Zhu L, Cox LA, Craiglow B, Chen L, Banfield C, Page K, Zhang W, Vincent MS. A phase 2a randomized, placebo-controlled study to evaluate the efficacy and safety of the oral Janus kinase inhibitors ritlecitinib and brepocitinib in alopecia areata: 24-week results. J Am Acad Dermatol. 2021;85(2):379-387. https://doi: 10.1016/j.jaad.2021.03.050.

10: King B, Ko J, Forman S, Ohyama M, Mesinkovska N, Yu G, McCollam J, Gamalo M, Janes J, Edson-Heredia E, Holzwarth K, Dutronc Y. Efficacy and safety of the oral Janus kinase inhibitor baricitinib in the treatment of adults with alopecia areata: Phase 2 results from a randomized controlled study. J Am Acad Dermatol. 2021;85(4):847-853. https://doi: 10.1016/j.jaad.2021.05.050.

11: Dincer Rota D, Emeksiz MAC, Erdogan FG, Yildirim D. Experience with oral tofacitinib in severe alopecia areata with different clinical responses. J Cosmet Dermatol. 2021 Sep;20(9):3026-3033. https://doi: 10.1111/jocd.13966.

12: Wambier CG, Craiglow BG, King BA. Combination tofacitinib and oral minoxidil treatment for severe alopecia areata. J Am Acad Dermatol. 2021;85(3):743-745. https://doi: 10.1016/j.jaad.2019.08.080.

13: Kerkemeyer KLS, John JM, Sinclair R, Bhoyrul B. Response of alopecia areata of the beard to oral tofacitinib. J Am Acad Dermatol. 2020;82(5):1228-1230. https://doi: 10.1016/j.jaad.2019.10.058.

14: Yale K, Pourang A, Plikus MV, Mesinkovska NA. At the crossroads of 2 alopecias: Androgenetic alopecia pattern of hair regrowth in patients with alopecia areata treated with oral Janus kinase inhibitors. JAAD Case Rep. 2020;6(5):444-446. https://doi: 10.1016/j.jdcr.2020.02.026.

15: Akdogan N, Ersoy-Evans S, Doğan S, Atakan N. Experience with oral tofacitinib in two adolescents and seven adults with alopecia areata. Dermatol Ther. 2019;32(6):e13118. https://doi: 10.1111/dth.13118.

16: Almutairi N, Nour TM, Hussain NH. Janus Kinase Inhibitors for the Treatment of Severe Alopecia Areata: An Open-Label Comparative Study. Dermatology. 2019;235(2):130-136. doi: 10.1159/000494613.

17: Chen YY, Lin SY, Chen YC, Yang CC, Lan CE. Low-dose tofacitinib for treating patients with severe alopecia areata: an efficient and cost-saving regimen. Eur J Dermatol. 2019;29(6):667-669. https://doi: 10.1684/ejd.2019.3668.

18: Craiglow BG, King BA. Tofacitinib for the treatment of alopecia areata in preadolescent children. J Am Acad Dermatol. 2019;80(2):568-570. https://doi: 10.1016/j.jaad.2018.08.041.

19: Dai YX, Chen CC. Tofacitinib therapy for children with severe alopecia areata. J Am Acad Dermatol. 2019;80(4):1164-1166. https://doi: 10.1016/j.jaad.2018.12.041.

20: Liu LY, King BA. Ruxolitinib for the treatment of severe alopecia areata. J Am Acad Dermatol. 2019;80(2):566-568. https://doi: 10.1016/j.jaad.2018.08.040.

21: Serdaroğlu S, Engin B, Çelik U, Erkan E, Aşkın Ö, Oba Ç, Kutlubay Z. Clinical experiences on alopecia areata treatment with tofacitinib: A study of 63 patients. Dermatol Ther. 2019;32(3):e12844. https://doi: 10.1111/dth.12844.

22: Shin JW, Huh CH, Kim MW, Lee JS, Kwon O, Cho S, Park HS. Comparison of the Treatment Outcome of Oral Tofacitinib with Other Conventional Therapies in Refractory Alopecia Totalis and Universalis: A Retrospective Study. Acta Derm Venereol. 2019;99(1):41-46. https://doi: 10.2340/00015555-3057.

23: Shivanna CB, Shenoy C, Priya RA. Tofacitinib (Selective Janus Kinase Inhibitor 1 and 3): A Promising Therapy for the Treatment of Alopecia Areata: A Case Report of Six Patients. Int J Trichology. 2018 May;10(3):103-107. https://doi: 10.4103/ijt.ijt_21_18

24: Cheng MW, Kehl A, Worswick S, Goh C. Successful Treatment of Severe Alopecia Areata With Oral or Topical Tofacitinib. J Drugs Dermatol. 2018;17(7):800-803

25: Jabbari A, Sansaricq F, Cerise J, Chen JC, Bitterman A, Ulerio G, Borbon J, Clynes R, Christiano AM, Mackay-Wiggan J. An Open-Label Pilot Study to Evaluate the Efficacy of Tofacitinib in Moderate to Severe Patch-Type Alopecia Areata, Totalis, and Universalis. J Invest Dermatol. 2018 Jul;138(7):1539-1545. https://doi: 10.1016/j.jid.2018.01.032.

26: Lee JS, Huh CH, Kwon O, Yoon HS, Cho S, Park HS. Nail involvement in patients with moderate-to-severe alopecia areata treated with oral tofacitinib. J Dermatolog Treat. 2018;29(8):819-822. https://doi: 10.1080/09546634.2018.1466024.

27: Liu LY, Craiglow BG, King BA. Tofacitinib 2% ointment, a topical Janus kinase inhibitor, for the treatment of alopecia areata: A pilot study of 10 patients. J Am Acad Dermatol. 2018;78(2):403-404.e1. https://doi: 10.1016/j.jaad.2017.10.043.

28: Patel NU, Oussedik E, Grammenos A, Pichardo-Geisinger R. A Case Report Highlighting the Effective Treatment of Alopecia Universalis With Tofacitinib in an Adolescent and Adult Patient. J Cutan Med Surg. 2018;22(4):439-442. https://doi: 10.1177/1203475418760512.

29: Putterman E, Castelo-Soccio L. Topical 2% tofacitinib for children with alopecia areata, alopecia totalis, and alopecia universalis. J Am Acad Dermatol. 2018;78(6):1207-1209.e1. https://doi: 10.1016/j.jaad.2018.02.031.

30: Castelo-Soccio L. Experience with oral tofacitinib in 8 adolescent patients with alopecia universalis. J Am Acad Dermatol. 2017;76(4):754-755. https://doi: 10.1016/j.jaad.2016.11.038

31: Deeb M, Beach RA. A Case of Topical Ruxolitinib Treatment Failure in Alopecia Areata. J Cutan Med Surg. 2017 Nov/Dec;21(6):562-563. https://doi: 10.1177/1203475417716363.

32: Erduran F, Adışen E, Aksakal AB. Excellent response to tofacitinib treatment in a patient with alopecia universalis. Acta Dermatovenerol Alp Pannonica Adriat. 2017;26(2):47-49. https://doi: 10.15570/actaapa.2017.15.

33: Ibrahim O, Bayart CB, Hogan S, Piliang M, Bergfeld WF. Treatment of Alopecia Areata With Tofacitinib. JAMA Dermatol. 2017 Jun 1;153(6):600-602. https://doi: 10.1001/jamadermatol.2017.0001

34: Liu LY, Craiglow BG, Dai F, King BA. Tofacitinib for the treatment of severe alopecia areata and variants: A study of 90 patients. J Am Acad Dermatol. 2017;76(1):22-28. https://doi: 10.1016/j.jaad.2016.09.007.

35: Park HS, Kim MW, Lee JS, Yoon HS, Huh CH, Kwon O, Cho S. Oral tofacitinib monotherapy in Korean patients with refractory moderate-to-severe alopecia areata: A case series. J Am Acad Dermatol. 2017;77(5):978-980. https://doi: 10.1016/j.jaad.2017.06.027.

36: Kennedy Crispin M, Ko JM, Craiglow BG, Li S, Shankar G, Urban JR, Chen JC, Cerise JE, Jabbari A, Winge MC, Marinkovich MP, Christiano AM, Oro AE, King BA. Safety and efficacy of the JAK inhibitor tofacitinib citrate in patients with alopecia areata. JCI Insight. 2016 22;1(15):e89776. https://doi: 10.1172/jci.insight.89776.

37: Mackay-Wiggan J, Jabbari A, Nguyen N, Cerise JE, Clark C, Ulerio G, Furniss M, Vaughan R, Christiano AM, Clynes R. Oral ruxolitinib induces hair regrowth in patients with moderate-to-severe alopecia areata. JCI Insight. 2016;1(15):e89790. https://doi: 10.1172/jci.insight.89790.

Supplemental Table 3: adverse effect reported by the studies

Reference	JAK inhibitor	Treatment duration (time)	Infection	Laboratory abnormalities	Neurologic	Gastrointestinal or weight gain	Cutaneous	Malignancy	Other
Benton et al. (2022) [1]	Oral tofacitinib	6 months	-	7% (n=2) elevated ALT, 11.4% (n=4) elevated total cholesterol, 11.4% (n=4) low hemoglobin, 8.6% (n=3) low white blood cell count, 2.9% (n=1) low absolute neutrophil count.	-	-	-	-	
King et al. (2022) [2]	CTP-543 (deuruxolitinib)	24 weeks	**4mg:** 10.3% (n=3) nasopharyngitis, 6.9% (n=2) upper respiratory tract infection, 13.8% (n=4) cough	**4mg:** 10.3% (n=3) blood creatine phosphokinase increased	**4mg:** 17.2% (n=5) headache	**4mg:** 13.8% (n=4) nausea, 10.3% (n=3) diarrhea	**4mg:** 13.8% (n=4) acne, 10.3% (n=3) folliculitis	**4mg:** -	**4mg:** 10.3% (n=3) oropharyngeal pain
			8 mg: 7.9% (n=3) nasopharyngitis, 5.3% (n=2) upper respiratory tract infection, .6% (n=1) cough	**8 mg:** 5.3% (n=2) blood creatine phosphokinase increased, 10.5% (n=4) low density lipoprotein increased	**8 mg:** 26.3% (n=10) headache	**8 mg:** 10.5% (n=4) nausea, 2.6% (n=1) diarrhea	**8 mg:** 10.5% (n=4) acne, 5.3% (n=2) folliculitis	**8 mg:** -	**8 mg:** 2.6% (n=1) oropharyngeal pain
			12 mg: 25.0% (n=9) nasopharyngitis, 19.4% (n=7) upper respiratory tract infection, 5.6% (n=2) cough	**12 mg:** 2.8% (n=1) blood creatine phosphokinase increased	**12 mg:** 19.4% (n=7) headache	**12 mg:** 2.8% (n=1) nausea	**12 mg:** 16.7% (n=6) acne, 2.8% (n=1) folliculitis	**12 mg:** -	**12 mg:** -
King et al. (2022) [3]	Oral Baricitinib	36 weeks	**AA1- 2 mg:**	**AA1- 2 mg:**	**AA1- 2 mg:**	**AA1- 2 mg:**	**AA1- 2 mg:**	**AA1- 2 mg:**	**AA1- 2 mg:**

			4.9% (n=9) upper respiratory tract infection, 6.6% (n=12) nasopharyngitis, 1.15 (n=2) urinary tract infection	1.6% (n=3) blood creatine kinase increased.	4.4% (n=8) headache	-	5.5% (n=10) acne	-	-
			AA1-4 mg: 7.5% (n=21) upper respiratory tract infection, 7.5%(n=21) nasopharyngitis, 2.5% (n=7) urinary tract infection	**AA1-4 mg:** 5.7% (n=16) blood creatine kinase increased	**AA1-4 mg:** 5.0% (n=14) headache	**AA1-4 mg:**	**AA1-4 mg:** 5.7% (n=16) acne	**AA1-4 mg:** -	**AA1-4 mg:** -
			AA2- 2 mg: 7.7% (n=12) upper respiratory tract infection, 1.3% (n=2) nasopharyngitis, 7.7% (n=12) urinary tract infection	**AA2- 2 mg:** -	**AA2- 2 mg:** 7.7% (n=12) headache	**AA2- 2 mg:** -	**AA2- 2 mg:** 5.8% (n=9) acne,	**AA2- 2 mg:** -	**AA2- 2 mg:** -
			AA2- 4mg: 6.4% (n=15) upper respiratory tract infection, 6.4% (n=15) nasopharyngitis, 4.7% (n=11) urinary tract infection	**AA2- 4mg:** 3.0% (n=7) blood creatine kinase increased	**AA2- 4mg:** 9.0% (n=21) headache	AA2- 4mg: -	**AA2- 4mg:** 4.7% (n=11) acne	**AA2- 4mg:** -	**AA2- 4mg:** -
Mikhaylov et al. (2022) [4]	Topical delgocitinib	12 weeks	-	-	-	-	10% (n=2) Folliculitis	-	-
Yassky et al. (2022) [5]	Oral ritlecitinib	28 weeks	-	-	-	-	-	-	-
	Oral brepocitinib	28 weeks	-	-	-	-	-	-	-
Esteves et al. (2021) [6]	Oral tofacitinib	8 months	-	-	-	-	-	-	No serious adverse side effect were observed.

Jerjen et al. (2021) [7]	Oral tofacitinib	9 months	Upper respiratory infections (n=3)	elevation in AST and ALT 36% (n=5), eosinophilia 36% (n=5), hypercholesterolemia 21% (n=3), elevated urea 21% (n=3), hyperkalemia 21% (n=3), low total protein 7% (n=1), elevated triglycerides 7% (n=1),persistent, asymptomatic hyperbilirubinemia 7% (n=1)	-	-	-	-	lower leg pain (n=1)
Lai et al. (2021) [8]	Sublingual tofacitinib	12 weeks	-	-	-	-	-	-	-
King et al. a(2021) [9]	Oral ritlecitinib	24 weeks	8% (n=4) upper respiratory tract infection, 13% (n=6) nasopharyngitis, 4% (n=2) viral upper repiratory tract infection	-	13% (n=6) headache	6% (n=3) nausea, 8% (n=4) diarrhea	10% (n=5) acne, 6% (n=3) folliculitis, 6% (n=3) AD	-	-
	Oral brepocitinib	24 weeks	23% (n=11) upper respiratory tract infection, 9% (n=4) nasopharyngitis, 6% (n=3) sinusitis, 6% (n=3) viral upper respiratory tract infection	6% (n=3) neutrophil count decreased	9% (n=4) headache,	6% (n=3) nausea, 2% (n=1) diarrhea, 2% (n=1) abdominal discomfort, 6% (n=3) abdominal pain, 6%	11% (n=5) acne, 2% (n=1) folliculitis, 2% (n=1) AD		6% (n=3) oropharyngeal pain
King et al. (2021) [10]	Oral baricitinib	36 weeks	**1 mg:**	-	-	-	-	-	-
			2 mg: Upper respiratory tract infection: 11.1% (n=3), herpes zoster 3.7% (n=1), herpes simplex 11.1%	-	-	7.4% (n=2) nausea	7.4% (n=2) acne	-	-

			(n=3) and herpes zoster 3.7% (n=1)						
			4 mg: Upper respiratory tract infection: 22.2% (n=6), 3.7%(n=1) herpes zoster and 3.7% (n=1) herpes simplex	-	-	7.4% (n=2) nausea	11.1% (n=3) acne	-	-
Rota et al. (2021) [11]	Oral tofacitinib	Mean of 12 months	-	8% (n=1/13) Transaminase elevation	-	-	61.5% (n=8/13) Acneiform lesions, oily skin	-	-
Wambier et al. (2021) [12]	Oral tofacitinib	3 months	-	-	-	-	N=6 hypertrichosis (upper lip and preauricular hair) and n=2 acne	-	-
Kerkemeyer et al. (2020) [13]	Oral tofacitinib	Mean of 15.5 months	Upper respiratory infections 22% (n=10)	elevated liver transaminases, fatigue 22% (n=10)			acne 22% (n=10)		
Yale et al (2020) [14]	Oral (unknown JAK inhibitor)	24-40 weeks	-	-	-	-	-	-	-
Akdogan et al. (2019) [15]	Oral tofacitinib	6 months	Respiratory tract infections (n=2)	-	-	-	-	-	and proteinuria (n=1)
Almutairi et al. (2019) [16]	Oral ruxolitinib	6 months	2.63% (n=1) upper respiratory tract, 13.16% (n=5) urinary tract infection, 5.27% (n=2) Zoster	5.27% (n=2) leukopenia, 7.89% (n=3) elevated AST/ALT	5.27% (n=2), headache	2.63% (n=1) abdominal pain, 2.63% (n=1) diarrhea, 2.63 (n=1) weight gain	2.63% (n=1) folliculitis	-	5.27% (n=2) fatigue
	Oral tofacitinib	6 months	8.11% (n=3) upper respiratory infection, 10.81% (n=4) urinary tract infection, 2.70% (n=1) zoster, 2.70% (n=1)	5.44% (n=2) leukppenia, 5.44% (n=2) elevated AST/ALT, 5.44% (n=2) elevated triglycerides, 2.70%	5.44% (n=2) headache	5.44% (n=2) weight gain.	10.88% (n=4) folliculitis)	-	-

			bronchitis, 8.11% (n=3) genital warts	(n=1) elevated cholesterol					
Chen et al. (2019) [17]	Oral tofacitinib	6 months	--	-	-	-	-	-	No serious adverse events was reported.
Craiglow et al. (2019) [18]	Oral tofacitinib	Mean of 8.5 months	-	-	-	-	-	-	No serious adverse events was reported.
Dai et al. (2019) [19]	Oral tofacitinib	Mean of 13 months	66.7% (n=2/3) diarrhea and 33.3% (n=1/3) upper respiratory tract infection	-	-	-	-	-	-
Liu et al. (2019) [20]	Oral ruxolitinib	Mean of 13.9 months	Upper respiratory infections	Decrease in white blood cell count from 3800 white blood cells/microliter to 3200 white blood cells/microliter	-	weight gain	worsening of or development of new acne	-	easy bruising and fatigue
Serdaroglu et al. (2019) [21]	Oral tofacitinib	At least 6 months	-	-	-	-	-	-	-
Shin et al. (2019) [22]	Oral tofacitinib	6 months	5.5% (n= 1) nasopharyngitis, wart	5.5% (n= 1) anaemia	-	5.5% (n= 1) abdominal discomfort	5.5% (n= 1) skin rash, (n=1) urticarial,	-	5.5% (n= 1) palmoplantar desquamation
Shivanna et al. (2019) [23]	Oral tofacitinib	4 months	-	-	-	-	33.3% (n=2) acneiform eruptions.	-	-
Cheng et al. (2018) [24]	Topical 2% tofacitinib	7 months	-	-	-	-	-	-	-
	Oral tofacitinib	Mean of 14.4 months	9% (n=1/11) hyperlidemia	-	-	9% (n=1) weight gain	-	-	9% (n=1) knee soreness, mild joint aches, 9% (n=1) multiple sclerosis
Jabbari et al. (2018) [25]	Oral tofacitinib	6-18 months	91.6% (n=11/12) upper respiratory infection, , 16.6% (n=2/12) asymptomatic bacteriuria, and 8.3% (n=1/12) conjunctivitis	8.3% (n=1/12) transaminitis.	8.3% (n=1/12) headache	33.3%(n=4/12) increased bowel movement frequency, 25% (b=3/12) loose stools, 16.6%	25% (n=3/12) mild acne		33.3% (n=4/12) blood on urinalysis, 8.3% (n=1/12) urinary retention, hypertensive urgency, bloating,

						(n=2/13) weight gain			constipation, dizziness, headache, neuropathic pain, and vaginal spotting
Lee et al. (2018) [26]	Oral tofacitinib	Mean of 9.5 months	-	-	-	-	-	-	-
Liu et al. (2018) [27]	Topical tofacitinib 2%	24 weeks	-	-	-	-	-	-	-
Patel et al. (2018) [28]	Oral tofacitinib	5 months	-	-	-	**5 mg twice daily:** Increased appetite and minor weight gain. (not reported by how many patients).	-	-	-
Putterman et al. (2018) [29]	Topical tofacitinib 2%	Mean of 32.8 weeks	-	-	-	-	-	-	11% (n=1/9): Application site irritation.
Castelo-Soccio et al. (2017) [30]	Oral tofacitinib	9 months	-	-	-	-	-	-	No serious adverse events
Deeb et al. (2017) [31]	Topical ruxolitinib	1.5 months	-	-	-	-	-	-	-
Erduran et al. (2017) [32]	Oral tofacitinib	6 months	-	-	-	-	-	-	-
Ibrahim et al. (2017) [33]	Oral tofacitinib	Mean of 6.4 months	-	15% (n=2/13) Liver enzyme abnormalities	-	-	8% (n=1/13) morbilliform eruption and peripheral edema	-	-
Liu et al. (2017) [34]	Oral tofacitinib	4 to 18 months	28.9% (n=26) Upper respiratory infection, 3.3% (n=3) urinary tract infection, 2.2% (n=2) tonsillitis, 2.2% (n=2) varicella zoster, 1.1%	1.1%(n=1) leukopenia, 1.1%(n=1) AST/ALT>2*normal, 32% (n=6) triglycerides average increase, 50.2%	-	--	-	-	-

			(n=1) bronchitis, 1.1% (n=1) conjunctivitis	(n=15) total cholesterol average increase, 32.2% (n=15) LDL average increase					
Park et al. (2017) [35]	Oral tofacitinib	7.5 months	-	-	-	-	-	-	-
Crispin et al. (2016) [36]	Oral tofacitinib	3 months	Upper respiratory infection : 16.7% (n=11) Urinary tract infection: 3% (n=2) Zoster: 1.5% (n=1) Conjunctivitis: 1.5% (n=1) and bronchitis, mononucleosis, paronychia, 1.5% (n=1) cough	-	7.6% (n=5) headache	7.6% (n=5) abdominal pain, 6.1% (n=4), diarrhea, 1.5% (n=1) nausea, , 1.5% (n=1) weight pain.	7.6% (n=5) acne, 4.5 (n=3)% hot flashes, 3.0% (n=2) prirutus, 3.0% (n=2) folliculitis, 3.0% (n=2) numbness	-	6.1% (n=4) fatigue, 3.0% (n=2) numbness, , 1.5% (n=1) amenorrhea, , 1.5% (n=1) dry eyes
Wiggan et al. (2016) [37]	Oral Ruxolitinib	3-6 months	58.3% (n=7) upper respiratory tract infection/allergy symptoms, 8.3% (n=1) urinary tract infection, 8.3% (n=1) mild pneumonia, 8.3% (n=1) conjunctival haemorrhage	8.3% (n=1) lowered hemoglobin.	-	-	25% (N=3) bacterial skin infections,	-	-

AST= aspartate aminotransferase; ALT= alanine transaminase; AD= atopic dermatitis; _ = data not reported in the article

Reference:

1: Benton S, Farah R, Freese R, Hordinsky M. Tofacitinib as a pragmatic treatment choice for alopecia areata: A retrospective review. Dermatol Ther. 2022;35(4):e15310. https://doi: 10.1111/dth.15310.

2: King B, Mesinkovska N, Mirmirani P, Bruce S, Kempers S, Guttman-Yassky E, Roberts JL, McMichael A, Colavincenzo M, Hamilton C, Braman V, Cassella JV. Phase 2 randomized, dose-ranging trial of CTP-543, a selective Janus Kinase inhibitor, in moderate-to-severe alopecia areata. J Am Acad Dermatol. 2022;87(2):306-313. https://doi: 10.1016/j.jaad.2022.03.045.

3: King B, Ohyama M, Kwon O, Zlotogorski A, Ko J, Mesinkovska NA, Hordinsky M, Dutronc Y, Wu WS, McCollam J, Chiasserini C, Yu G, Stanley S, Holzwarth K, DeLozier AM, Sinclair R; BRAVE-AA Investigators. Two Phase 3 Trials of Baricitinib for Alopecia Areata. N Engl J Med. 20225;386(18):1687-1699. https://doi: 10.1056/NEJMoa2110343.

4: Mikhaylov D, Glickman JW, Del Duca E, Nia J, Hashim P, Singer GK, Posligua AL, Florek AG, Ibler E, Hagstrom EL, Estrada Y, Rangel SM, Colavincenzo M, Paller AS, Guttman-Yassky E. A phase 2a randomized vehicle-controlled multi-center study of the safety and efficacy of delgocitinib in subjects with moderate-to-severe alopecia areata. Arch Dermatol Res. 2022;1. https://doi: 10.1007/s00403-022-02336-0

5: Guttman-Yassky E, Pavel AB, Diaz A, Zhang N, Del Duca E, Estrada Y, King B, Banerjee A, Banfield C, Cox LA, Dowty ME, Page K, Vincent MS, Zhang W, Zhu L, Peeva E. Ritlecitinib and brepocitinib demonstrate significant improvement in scalp alopecia areata biomarkers. J Allergy Clin Immunol. 2022;149(4):1318-1328. https://doi: 10.1016/j.jaci.2021.10.036

6: Esteves M, Lopes S, Azevedo F, Pedrosa A. Effectiveness of Oral Tofacitinib Dose Tapering in a Case of Alopecia Areata Universalis. Skin Appendage Disord. 2021;7(1):36-40. https://doi: 10.1159/000510673.

7: Jerjen R, Meah N, Trindade de Carvalho L, Wall D, Eisman S, Sinclair R. Treatment of alopecia areata in pre-adolescent children with oral tofacitinib: A retrospective study. Pediatr Dermatol. 2021;38(1):103-108. https://doi: 10.1111/pde.14422

8: Lai VWY, Bokhari L, Sinclair R. Sublingual tofacitinib for alopecia areata: a roll-over pilot clinical trial and analysis of pharmacokinetics. Int J Dermatol. 2021;60(9):1135-1139. https://doi: 10.1111/ijd.15657.

9: King B, Guttman-Yassky E, Peeva E, Banerjee A, Sinclair R, Pavel AB, Zhu L, Cox LA, Craiglow B, Chen L, Banfield C, Page K, Zhang W, Vincent MS. A phase 2a randomized, placebo-controlled study to evaluate the efficacy and safety of the oral Janus kinase inhibitors ritlecitinib and brepocitinib in alopecia areata: 24-week results. J Am Acad Dermatol. 2021;85(2):379-387. https://doi: 10.1016/j.jaad.2021.03.050.

10: King B, Ko J, Forman S, Ohyama M, Mesinkovska N, Yu G, McCollam J, Gamalo M, Janes J, Edson-Heredia E, Holzwarth K, Dutronc Y. Efficacy and safety of the oral Janus kinase inhibitor baricitinib in the treatment of adults with alopecia areata: Phase 2 results from a randomized controlled study. J Am Acad Dermatol. 2021;85(4):847-853. https://doi: 10.1016/j.jaad.2021.05.050.

11: Dincer Rota D, Emeksiz MAC, Erdogan FG, Yildirim D. Experience with oral tofacitinib in severe alopecia areata with different clinical responses. J Cosmet Dermatol. 2021 Sep;20(9):3026-3033. https://doi: 10.1111/jocd.13966.

12: Wambier CG, Craiglow BG, King BA. Combination tofacitinib and oral minoxidil treatment for severe alopecia areata. J Am Acad Dermatol. 2021;85(3):743-745. https://doi: 10.1016/j.jaad.2019.08.080.

13: Kerkemeyer KLS, John JM, Sinclair R, Bhoyrul B. Response of alopecia areata of the beard to oral tofacitinib. J Am Acad Dermatol. 2020;82(5):1228-1230. https://doi: 10.1016/j.jaad.2019.10.058.

14: Yale K, Pourang A, Plikus MV, Mesinkovska NA. At the crossroads of 2 alopecias: Androgenetic alopecia pattern of hair regrowth in patients with alopecia areata treated with oral Janus kinase inhibitors. JAAD Case Rep. 2020;6(5):444-446. https://doi: 10.1016/j.jdcr.2020.02.026.

15: Akdogan N, Ersoy-Evans S, Doğan S, Atakan N. Experience with oral tofacitinib in two adolescents and seven adults with alopecia areata. Dermatol Ther. 2019;32(6):e13118. https://doi: 10.1111/dth.13118.

16: Almutairi N, Nour TM, Hussain NH. Janus Kinase Inhibitors for the Treatment of Severe Alopecia Areata: An Open-Label Comparative Study. Dermatology. 2019;235(2):130-136. doi: 10.1159/000494613.

17: Chen YY, Lin SY, Chen YC, Yang CC, Lan CE. Low-dose tofacitinib for treating patients with severe alopecia areata: an efficient and cost-saving regimen. Eur J Dermatol. 2019;29(6):667-669. https://doi: 10.1684/ejd.2019.3668.

18: Craiglow BG, King BA. Tofacitinib for the treatment of alopecia areata in preadolescent children. J Am Acad Dermatol. 2019;80(2):568-570. https://doi: 10.1016/j.jaad.2018.08.041.

19: Dai YX, Chen CC. Tofacitinib therapy for children with severe alopecia areata. J Am Acad Dermatol. 2019;80(4):1164-1166. https://doi: 10.1016/j.jaad.2018.12.041.

20: Liu LY, King BA. Ruxolitinib for the treatment of severe alopecia areata. J Am Acad Dermatol. 2019;80(2):566-568. https://doi: 10.1016/j.jaad.2018.08.040.

21: Serdaroğlu S, Engin B, Çelik U, Erkan E, Aşkın Ö, Oba Ç, Kutlubay Z. Clinical experiences on alopecia areata treatment with tofacitinib: A study of 63 patients. Dermatol Ther. 2019;32(3):e12844. https://doi: 10.1111/dth.12844.

22: Shin JW, Huh CH, Kim MW, Lee JS, Kwon O, Cho S, Park HS. Comparison of the Treatment Outcome of Oral Tofacitinib with Other Conventional Therapies in Refractory Alopecia Totalis and Universalis: A Retrospective Study. Acta Derm Venereol. 2019;99(1):41-46. https://doi: 10.2340/00015555-3057.

23: Shivanna CB, Shenoy C, Priya RA. Tofacitinib (Selective Janus Kinase Inhibitor 1 and 3): A Promising Therapy for the Treatment of Alopecia Areata: A Case Report of Six Patients. Int J Trichology. 2018 May;10(3):103-107. https://doi: 10.4103/ijt.ijt_21_18

24: Cheng MW, Kehl A, Worswick S, Goh C. Successful Treatment of Severe Alopecia Areata With Oral or Topical Tofacitinib. J Drugs Dermatol. 2018;17(7):800-803

25: Jabbari A, Sansaricq F, Cerise J, Chen JC, Bitterman A, Ulerio G, Borbon J, Clynes R, Christiano AM, Mackay-Wiggan J. An Open-Label Pilot Study to Evaluate the Efficacy of Tofacitinib in Moderate to Severe Patch-Type Alopecia Areata, Totalis, and Universalis. J Invest Dermatol. 2018 Jul;138(7):1539-1545. https://doi: 10.1016/j.jid.2018.01.032.

26: Lee JS, Huh CH, Kwon O, Yoon HS, Cho S, Park HS. Nail involvement in patients with moderate-to-severe alopecia areata treated with oral tofacitinib. J Dermatolog Treat. 2018;29(8):819-822. https://doi: 10.1080/09546634.2018.1466024.

27: Liu LY, Craiglow BG, King BA. Tofacitinib 2% ointment, a topical Janus kinase inhibitor, for the treatment of alopecia areata: A pilot study of 10 patients. J Am Acad Dermatol. 2018;78(2):403-404.e1. https://doi: 10.1016/j.jaad.2017.10.043.

28: Patel NU, Oussedik E, Grammenos A, Pichardo-Geisinger R. A Case Report Highlighting the Effective Treatment of Alopecia Universalis With Tofacitinib in an Adolescent and Adult Patient. J Cutan Med Surg. 2018;22(4):439-442. https://doi: 10.1177/1203475418760512.

29: Putterman E, Castelo-Soccio L. Topical 2% tofacitinib for children with alopecia areata, alopecia totalis, and alopecia universalis. J Am Acad Dermatol. 2018;78(6):1207-1209.e1. https://doi: 10.1016/j.jaad.2018.02.031.

30: Castelo-Soccio L. Experience with oral tofacitinib in 8 adolescent patients with alopecia universalis. J Am Acad Dermatol. 2017;76(4):754-755. https://doi: 10.1016/j.jaad.2016.11.038

31: Deeb M, Beach RA. A Case of Topical Ruxolitinib Treatment Failure in Alopecia Areata. J Cutan Med Surg. 2017 Nov/Dec;21(6):562-563. https://doi: 10.1177/1203475417716363.

32: Erduran F, Adışen E, Aksakal AB. Excellent response to tofacitinib treatment in a patient with alopecia universalis. Acta Dermatovenerol Alp Pannonica Adriat. 2017;26(2):47-49. https://doi: 10.15570/actaapa.2017.15.

33: Ibrahim O, Bayart CB, Hogan S, Piliang M, Bergfeld WF. Treatment of Alopecia Areata With Tofacitinib. JAMA Dermatol. 2017 Jun 1;153(6):600-602. https://doi: 10.1001/jamadermatol.2017.0001

34: Liu LY, Craiglow BG, Dai F, King BA. Tofacitinib for the treatment of severe alopecia areata and variants: A study of 90 patients. J Am Acad Dermatol. 2017;76(1):22-28. https://doi: 10.1016/j.jaad.2016.09.007.

35: Park HS, Kim MW, Lee JS, Yoon HS, Huh CH, Kwon O, Cho S. Oral tofacitinib monotherapy in Korean patients with refractory moderate-to-severe alopecia areata: A case series. J Am Acad Dermatol. 2017;77(5):978-980. https://doi: 10.1016/j.jaad.2017.06.027.

36: Kennedy Crispin M, Ko JM, Craiglow BG, Li S, Shankar G, Urban JR, Chen JC, Cerise JE, Jabbari A, Winge MC, Marinkovich MP, Christiano AM, Oro AE, King BA. Safety and efficacy of the JAK inhibitor tofacitinib citrate in patients with alopecia areata. JCI Insight. 2016 22;1(15):e89776. https://doi: 10.1172/jci.insight.89776.

37: Mackay-Wiggan J, Jabbari A, Nguyen N, Cerise JE, Clark C, Ulerio G, Furniss M, Vaughan R, Christiano AM, Clynes R. Oral ruxolitinib induces hair regrowth in patients with moderate-to-severe alopecia areata. JCI Insight. 2016;1(15):e89790. https://doi: 10.1172/jci.insight.89790.