Supplementary Table 1. Search strategy

	Search strategy
PubMed (N = 455)	1. "alopecia"[MeSH Terms] OR "alopecia"[All Fields] OR ("hair"[All Fields] AND "loss"[All Fields]) OR "hair loss"[All Fields] OR "baldness"[All Fields] OR "balding"[All Fields] 2. "vitamin d"[MeSH Terms] OR "vitamin d"[All Fields] OR "ergocalciferols"[MeSH Terms] OR "ergocalciferols"[All Fields] 3. "vitamin d deficiency"[MeSH Terms] OR "vitamin d deficiency"[All Fields] 4. #1 AND (#2 OR #3)
Embase (N = 1871)	1. 'alopecia'/exp OR alopecia 2. 'hair loss'/exp OR 'hair loss' 3. 'vitamin d'/exp OR 'vitamin d' 4. 'vitamin d deficiency'/exp OR 'vitamin d deficiency' 5. (#1 OR #2) AND (#3 OR #4)
Scopus (N = 1129)	1. TITLE-ABS-KEY (alopecia OR "hair loss" OR baldness OR balding) 2. TITLE-ABS-KEY ("vitamin d" OR "vitamin d deficiency") 3. 1 AND 2
Cochrane Library (N = 45)	1. alopecia OR "hair loss" OR baldness OR balding 2. "vitamin d" OR "vitamin d deficiency" 3. 1 AND 2

Supplementary Table 2. PICO framework

PICO 1	Are patients with alopecia more likely to have VDD or lower vitamin D levels than individuals without alopecia?
Population	Adult or pediatric population with and without alopecia
Intervention	Certain alopecia disorder*
Comparator	Control without alopecia
Outcomes	VDD† or vitamin D level
PICO 2	What is the prevalence of VDD among patients with certain alopecia disorders?
Population	Adult or pediatric population with certain alopecia disorders*
Intervention	Not applicable
Comparator	Not applicable
Outcomes	VDD†
PICO 3	Does the vitamin D level or VDD have a correlation with the severity of particular alopecia disorders?
Population	Adult or pediatric population with certain alopecia disorders*
Intervention	High severity of alopecia
Comparator	Low severity of alopecia
Outcomes	vitamin D level

VDD, Vitamin D deficiency

* Alopecia disorders, including but not limited to the following: non-scarring alopecia (alopecia areata, androgenetic alopecia, and telogen effluvium) and scarring alopecia (lichen planopilaris, frontal fibrosing alopecia, and central centrifugal cicatricial alopecia).
† VDD is defined as either < 20 ng/mL or < 10 ng/mL

Supplementary Table 3. The quality assessment of studies included in the systematic review

Comparative studies	Case		Control		Comparability		Exposure			
Study name	Definition (*)	Represent-ativeness (*)	Selection (*)	Definition (*)	Age (*)	Additional (*)	Ascertainment (**)	Same method (*)	Nonresponse rate (*)	Overall quality score
Wang et al. (2024)[86]	*	?	?	*	*	-	**	*	*	7
Hasanbeyzade and Tunca (2024)[68]	*	?	-	*	*	-	**	*	*	7
AbdElneam et al. (2024)[63]	*	?	?	*	*	-	**	*	*	7
Wu et al. (2023)[85]	*	?	?	*	*	*	*	*	*	7
Saleem et al. (2023)[69]	*	?	?	*	*	-	**	*	*	7
Leung et al. (2023)[100]	*	*	*	*	*	*	?	*	*	8
Hailat et al. (2023)[82]	*	?	?	*	*	-	?	*	*	5
Gupta et al. (2023)[66]	*	?	?	*	*	*	**	*	*	8
Alsenaid et al. (2023)[64]	*	?	?	*	*	*	**	*	*	8
Das (2022)[26]	*	?	?	*	*	-	**	*	*	7
deQueiroz et al. (2022)[27]	*	*	-	*	-	-	**	*	*	6
Gao et al. (2022)[28]	*	*	?	*	*	-	?	*	*	6
Krysiak et al. (2022)[71]	*	*	?	*	*	*	?	*	*	7
Tran et al. (2022)[16]	-	?	?	?	*	*	*	*	*	5
Abedini et al. (2021)[32]	*	?	?	*	*	*	**	*	*	8
Alizadeh et al. (2021)[88]	*	?	?	*	*	*	**	*	*	8
El-Tahlawy et al. (2021)[73]	*	?	?	*	*	*	**	*	*	8
Jasim et al. (2021)[74]	*	?	?	*	*	-	**	*	*	7
Lizarondo et al. (2021)[35]	*	?	?	*	*	*	**	*	*	8
Naser et al. (2021)[89]	*	?	?	*	*	*	**	*	*	8
Conic et al. (2020)[36]	-	*	-	-	*	*	*	*	*	7
Mohammad et al. (2020)[90]	*	-	-	*	*	*	**	*	*	8
Sanke et al. (2020)[76]	*	?	-	*	*	*	**	*	*	8
Zhao et al. (2020)[14]	*	*	?	*	*	*	**	*	*	9
El-Ghareeb (2019)[38]	*	?	?	*	*	-	?	*	*	5
Kondrakhina et al. (2019)[77]	*	?	?	*	*	*	**	*	*	8
Marahatta et al. (2019)[39]	*	*	?	*	*	*	**	*	*	9
Namdar and Arikan (2019)[40]	*	?	?	*	-	-	**	*	*	6
Rehman et al. (2019)[41]	*	?	?	*	*	*	**	*	*	8
Siddappa et al. (2019) – adult AA[42]	*	?	?	*	*	*	**	*	*	8
Siddappa et al. (2019) – pediatric AA[43]	*	?	?	*	*	*	**	*	*	8
Brankov et al. (2018)[97]	*	*	-	*	*	*	**	*	*	9
Cifcia (2018)[92]	*	?	-	*	*	*	**	*	*	8
Daroach et al. (2018)[44]	*	?	?	*	*	*	**	*	*	8

Comparative studies	Case		Control		Comparability		Exposure			
Study name	Definition (*)	Represent-ativeness (*)	Selection (*)	Definition (*)	Age (*)	Additional (*)	Ascertainment (**)	Same method (*)	Nonresponse rate (*)	Overall quality score
Gade et al. (2018)[45]	*	?	?	*	*	*	**	*	*	8
Karaguzel et al. (2018)[46]	*	*	?	*	*	*	**	*	*	9
Saniee et al. (2018)[15]	*	*	-	*	*	*	**	*	*	9
Sarac and Koca (2018)[78]	*	*	?	*	-	-	**	*	*	7
Unal and Gonulalan (2018)[47]	*	?	?	*	-	-	**	*	*	6
Bhat et al. (2017)[48]	*	?	-	*	*	*	**	*	*	8
Conic et al. (2017)[49]	*	*	-	*	*	-	**	*	*	8
Erpolat et al. (2017)[50]	*	?	?	*	-	-	**	*	*	6
Ghafoor and Anwar (2017)[51]	*	?	-	*	*	*	**	*	*	8
Gurel et al. (2017)[93]	*	?	?	*	*	*	**	*	*	8
Attawa et al. (2016)[53]	*	?	?	*	-	-	**	*	*	6
Bakry et al. (2016)[54]	*	?	?	*	*	*	**	*	*	8
Banihashemi et al. (2016)[79]	*	?	?	*	*	*	**	*	*	6
Darwish et al. (2016)[55]	*	?	?	*	*	*	**	*	*	8
Fattah and Darwish (2015)[56]	*	*	?	*	*	*	**	*	*	9
Ogrum et al. (2015)[57]	*	?	?	*	*	*	**	*	*	8
Cerman et al. (2014)[13]	*	*	?	*	*	*	**	*	*	9
Mahamid et al. (2014)[58]	*	*	-	-	*	*	**	*	*	8
Moneib et al. (2014)[80]	*	?	?	*	*	*	**	*	*	8
D'Ovidio et al. (2013)[59]	*	?	?	?	-	-	**	*	*	5
El-Mongy et al. (2013)[60]	*	?	?	*	-	-	**	*	*	6
Nassiri et al. (2013)[61]	*	?	?	*	-	-	**	*	*	6
Rasheed et al. (2013)[81]	*	?	?	*	*	*	**	*	*	8
Yilmaz et al.(2012) [62]	*	?	?	*	-	-	**	*	*	6
Karadag et al. (2011)[95]	*	?	-	-	-	*	**	*	*	7

Descriptive studies	Sample			Exposure	Comparability		Outcome		
Study name	Representativeness (*)	Sample size (*)	Non-respondents (*)	Ascertainment (**)	Age (*)	Additional (*)	Assessment (**)	Statistics (*)	Overall quality score
Losoya-Jaquez et al. (2024)[25]	*	-	*	**	*	*	?	*	7
Vandana et al. (2023)[84]	?	*	*	**	*	-	?	*	6
Okhovat et al. (2023)[83]	*	*	*	**	*	-	?	*	7
Hamidpour et al. (2023)[67]	*	*	*	**	*	*	?	*	8
Gharaei Nejad et al. (2023)[98]	*	*	*	**	*	*	?	*	8
Fahim et al. (2023)[65]	?	*	*	**	*	-	?	*	6
Arslan et al. (2023)[96]	*	*	*	**	*	-	?	*	7
Arasu et al. (2022)[70]	?	*	*	?	*	*	?	*	5
Chen et al. (2022)[24]	*	*	*	*	*	*	?	*	7
Collins et al. (2022)[99]	*	-	*	**	-	*	?	*	6
Goksin (2022)[29]	*	*	*	*	*	-	?	*	6
Lim et al. (2022)[30]	*	*	*	*	*	*	?	*	7
Oner and Akdeniz (2022)[31]	*	*	*	**	*	-	**	*	9
Yorulmaz et al. (2022)[87]	*	*	*	**	*	-	?	*	7
Alamoudi et al. (2021)[33]	*	*	*	*	*	-	?	*	6
Conic et al. (2021)[34]	*	*	*	*	*	*	?	*	7
Danane et al. (2021)[72]	?	*	*	**	*	-	?	-	5
Kerkemeyer et al. (2021)[75]	*	*	*	**	*	*	?	*	8
Sokmen (2020)[91]	*	*	*	**	*	-	?	*	7
Conic et al. (2019)[37]	*	*	*	**	*	*	?	*	8
Narang et al. (2017)[52]	*	-	*	*	*	-	?	*	5
Cheung et al. (2016)[94]	*	*	*	**	-	*	?	*	7

Supplementary Table 4. Characteristics and main findings of studies included in the meta-analysis

Wang et al. (2024)		
Study characteristics	- Study type: case-control, single-center study - Study duration: N/A - Country: China	
Participant characteristics	- No. of subjects: 40 MAGA - Age: 27.3 ± 5.3 years - Gender: Male 40 (100%) - Ethnicity: N/A - BMI: 25.55 ± 3.45 kg/cm^2 - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: N/A - Disease severity score/ grading: N/A - Alopecia pattern: N/A - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: N/A	- No. of subjects: 45 controls - Age: 28.3 ± 4.2 years - Gender: Male 40 (100%) - Ethnicity: N/A - BMI: 24.67 ± 2.78 kg/cm^2 - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: N/A - Disease severity score/ grading: N/A - Alopecia pattern: N/A - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: N/A
Vitamin D data	- VDD: N/A - Level: 21.08 ± 9.18 ng/mL - Correlation: N/A	- VDD: N/A - Level: 26.67 ± 8.51 ng/mL - Correlation: N/A
Vitamin D measurement	- Definition: N/A - Measurement method: Chemiluminescence immunoassay method using ADVIA Chemistry XPT system (Siemens, Japan)	
Other		

Losoya-Jaquez et al. (2024)	
Study characteristics	• Study type: retrospective, descriptive, multi-center study • Study duration: January 2008 to January 2023 • Country: Mexico
Participant characteristics	• No. of subjects: 145 pediatric AGA (13 with vitamin D results) • Age: 16.08 ± 1.30 years • Gender: 103 males and 42 females (71 and 21%, respectively) • Ethnicity: N/A • BMI: N/A • Comorbidity: 17 (50%) acne, 8 (23.3%) seborrheic dermatitis, 6 (17.5%) IR, 2 (6%) obesity, 1 (3%) atopic dermatitis • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: 34 (23.4%) topical minoxidil, 3 (2.0%) finasteride, 2 (1.3%) dutasteride, 2 (1.3%) spironolactone • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 11/13 (84%) • Level: N/A • Correlation: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: N/A
Other	

Hasanbeyzade and Tunca (2024)		
Study characteristics	• Study type: prospective, case-control, single-center study • Study duration: 8 March 2016 and 31 May 2016 • Country: Turkey	
Participant characteristics	• No. of subjects: 41 AA • Age: 26.8 ± 7 years • Gender: 6 (14.6%) female and 35 (85.4%) males • Ethnicity: N/A • BMI: N/A • Comorbidity: 8 (19.5%) additional autoimmune diseases • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: AT 10 (24.4%), AU 9 (22.0%), patchy AA 11 (26.8%), diffuse AA 11 (26.8%) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 41 controls (age- and gender-matched) • Age: 26.9 ± 6.9 years • Gender: 5 (12.2%) female and 36 (87.8%) males • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 10 (24.4%) • Level: 32.1 ± 19.5 ng/ml • Correlation: N/A	• VDD: 4 (9.8%) • Level: 39.6 ± 15.7 ng/ml • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 20 ng/ml • Measurement method: vitamin D measurement was made by liquid chromatography mass spectrometry (Liquid Chromatography Mass Spectrometry/ Mass Spectrometry: LC-MS/MS) method	
Other		

AbdElneam et al. (2024)		
Study characteristics	• Study type: retrospective, case-control, single-center study • Study duration: N/A • Country: Saudi Arabia	
Participant characteristics	• No. of subjects: 82 AA • Age: 25 ± 3.9 years • Gender: Female 40 (48.8%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: Localized patchy 38 (46.4%), Multiple patchy 31 (37.8%), Ophiasis 13 (15.8%) • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 81 controls (age-matched) • Age: 23.8 ± 2.8 years • Gender: 45 (55.6%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: N/A • Level: 12.9 ± 3.9 ng/mL • Correlation: N/A	• VDD: N/A • Level: 20 ± 2.7 ng/mL • Correlation: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: Roche Cobas e411 system from Roche Diagnostics, Switzerland	
Other		

Wu et al. (2023)		
Study characteristics	• Study type: retrospective, case-control, single-center study • Study duration: N/A • Country: China	
Participant characteristics	• No. of subjects: 80 MAGA • Age: 36.28 ± 10.49 years • Gender: Male 80 (100%) • Ethnicity: N/A • BMI: 4.29 ± 2.41 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: Mild 36 (45%), moderate alopecia 37 (46.3%), severe alopecia 7 (0.09%) patients • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 60 controls (age-, gender- and BMI-matched) • Age: 36.28 ± 10.98 years • Gender: male 60 (100%) • Ethnicity: N/A • BMI: 3.59 ± 2.42 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 19 (23.75%) • Level: 23.64 ± 5.12 ng/mL • Correlation: N/A	• VDD: 10 (16.67%) • Level: 25.76 ± 6.37 ng/mL • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 20 ng/mL, VDI 20-30 ng/mL • Measurement method: by the laboratories of Jinling hospital (unspecified)	
Other		

Vandana et al. (2023)		
Study characteristics	• Study type: Cross-sectional, descriptive, single-center study • Study duration: March 2013 and February 2020 • Country: India	
Participant characteristics	• No. of subjects: 76 acute and chronic TE • Age: mean 24.4 years • Gender: Female 76 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 24 FPHL • Age: mean 28.9 years • Gender: Female 24 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 52 (68.4%) • Level: N/A • Correlation: N/A	• VDD: 18 (75%) • Level: N/A • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 20 ng/ml • Measurement method: N/A	
Other		

Saleem et al. (2023)		
Study characteristics	• Study type: case-control, single-center study • Study duration: October 2022 to July 2023 • Country: Pakistan	
Participant characteristics	• No. of subjects: 45 AA • Age: 22.94 ± 7.92 years • Gender: male 27 (60%), female 18 (40%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: S1 7 (15.6%), S2 10 (22.2%), S3 18 (40%), S4 3 (6.7%), S5 7 (15.6%) • Alopecia pattern: N/A • FH of alopecia: 13 (28.9%) • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 45 controls (age- and sex-matched) • Age: 23.84 ± 8.46 years • Gender: male 27 (60%), female 18 (40%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: 4 (8.9%) • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: N/A • Level: 14.6 ± 17.9 ng/mL • Correlation: N/A	• VDD: N/A • Level: 23.2 ± 15.32 ng/mL • Correlation: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: enzyme immunoassay for vitamin D on a chemical analyzer	
Other		

Okhovat et al. (2023)	
Study characteristics	• Study type: retrospective, descriptive, single-center study • Study duration: October 2015 to February 2019 • Country: USA
Participant characteristics	• No. of subjects: 367 FPHL (54 had vitamin D results at baseline) • Age: 50.04 ± 16.40 years • Gender: Female 367 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: polycystic ovary syndrome 13 (3.54%), thyroid disorder 81 (22.1%), anemia 30 (8.17%) • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 14 (25.9%) • Level: N/A • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 20 ng/ml • Measurement method: N/A
Other	

Leung et al. (2023)		
Study characteristics	• Study type: population-based, case-control study • Study duration: January 2015 to January 2020 • Country: USA	
Participant characteristics	• No. of subjects: 53 CCCA • Age: 51.3 ± 9.6 years • Gender: Female 53 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: African American/black 53 (100%) • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 212 controls (age- and gender-matched) • Age: 50.3 ± 9.5 years • Gender: Female 212 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: African American/black 212 (100%) • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 5 (9.4%) • Level: N/A • Correlation: N/A	• VDD: 0 • Level: N/A • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 20 ng/ml • Measurement method: N/A	
Other		

Hamidpour et al. (2023)	
Study characteristics	• Study type: cross-sectional, descriptive, single-center study • Study duration: April 2018 and September 2021 • Country: Iran
Participant characteristics	• No. of subjects: 402 AA • Age: 27.2 ± 13.4 years • Gender: females 192 (47.8%) and males 210 (52.2%) • Ethnicity: N/A • BMI: N/A • Comorbidity: 145 (36%) anxiety, dermatitis 119 (30%) • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: mean 1.93 ± 2.15 years • Disease severity score/ grading: median SALT (p25-p75) 68 (40−100) • Alopecia pattern: 21 (39.6%) AU, 21 (39.6%) AT, 21 (39.6%) patchy AA, 2 (3.77%) ophiasis • FH of alopecia: 38 (9.5%) had a history of AA in their first-degree relatives • Nail involvement: 53 patients (13.2%) • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 16 (4%) • Level: N/A • Correlation: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: N/A
Other	

Hailat et al. (2023)		
Study characteristics	• Study type: retrospective, case-control, single-center study • Study duration: November 2021 to October 2022 • Country: Pakistan	
Participant characteristics	• No. of subjects: 72 FPHL • Age: 28.6 ± 2.4 years • Gender: Female 72 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 72 controls (sex-matched) • Age: N/A • Gender: Female 72 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: N/A • Level: 15.4 ± 8.25 ng/mL • Correlation: N/A	• VDD: N/A • Level: 46.42 ± 19.92 ng/mL • Correlation: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: N/A	
Other		

Gupta et al. (2023)		
Study characteristics	• Study type: prospective, case-control, single-center study • Study duration: June 2018 to April 2019 • Country: India	
Participant characteristics	• No. of subjects: 25 AA • Age: 27.64 ± 9.83 years • Gender: female 8 (32 %) • Ethnicity: N/A • BMI: 22.63 ± 1.35 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: mean 9.51 ± 8.89 months • Disease severity score/ grading: S1 20 (80%), S2 2 (8%), S3-5 3 (12%) • Alopecia pattern: AT 1 (4%), AU 2 (8%) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: recurrence 17 (68%) • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 25 controls (Age- and gender-matched) • Age: 28.56 ± 7.95 years • Gender: female 8 (32 %) • Ethnicity: N/A • BMI: 22.45 ± 1.56 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: N/A • Level: 17.15 ± 5.01 ng/ml • Correlation: N/A	• VDD: N/A • Level: 34.58 ± 20.83 ng/ml • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 10 ng/ml • Measurement method: Siemens ADVIA Centaur Analyzer	
Other		

Gharaei Nejad et al. (2023)	
Study characteristics	• Study type: cross-sectional, descriptive, single-center study • Study duration: March 2016 to March 2019 • Country: Iran
Participant characteristics	• No. of subjects: 60 LPP • Age: 43.60 ± 10.17 years • Gender: 44 (73.3%) female, 16 (36.7%) male • Ethnicity: N/A • BMI: 26.52 ± 3.41kg/m2 • Comorbidity: 5.0%, 18.3%, 27.7%, 11.7%, 16.7%, and 20.0% had vitiligo, asthma and/ or allergy, hypothyroidism, diabetes, hypertension, and anemia, respectively • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 18 (30%) • Level: N/A • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 20 ng/ml • Measurement method: N/A
Other	

Fahim et al. (2023)	
Study characteristics	- Study type: prospective, descriptive, single-center study - Study duration: N/A - Country: Pakistan
Participant characteristics	- No. of subjects: 100 AA - Age: 30.5 ± 8.4 years - Gender: Female 58 (58%) - Ethnicity: N/A - BMI: N/A - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: 6 ± 3.8 months - Disease severity score/ grading: mean SALT 20.7 ± 5.4 - Alopecia pattern: N/A - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: N/A
Vitamin D data	- VDD: 69 (69%) - Level: N/A - Correlation: N/A
Vitamin D measurement	- Definition: VDD < 20 ng/ml - Measurement method: N/A
Other	

Arslan et al. (2023)	
Study characteristics	- Study type: retrospective, descriptive, single-center study - Study duration: March 2015 to March 2018 - Country: Turkey
Participant characteristics	- No. of subjects: 973 TE (58 with vitamin D results) - Age: 27.54 ± 9.42 years - Gender: female 840 (86.3%), male 133 (13.7%) - Ethnicity: N/A - BMI: N/A - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: N/A - Disease severity score/ grading: N/A - Alopecia pattern: N/A - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: N/A
Vitamin D data	- VDD: 51 (87.9%) - Level: N/A - Correlation: N/A
Vitamin D measurement	- Definition: VDD < 25 ng/ml - Measurement method: N/A
Other	

Alsenaid et al. (2023)		
Study characteristics	• Study type: case-control, single-center study • Study duration: June 2021 to October 2022 • Country: Saudi Arabia	
Participant characteristics	• No. of subjects: 59 AA • Age: 27.1 ± 9.1 years • Gender: Female 6 (10.2%) • Ethnicity: N/A • BMI: N/A • Comorbidity: AGA 9 (15.3%), T1DM 1 (1.7%) • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 22 (37.3%) > 6 months • Disease severity score/ grading: moderate 6 (10.2%), severe 9 (15.3%) • Alopecia pattern: N/A • FH of alopecia: AGA 17 (28.8%), AA 7 (11.9%) • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: no treatment 28 (47.5%), topical steroid 9 (15.3%), minoxidil 11 (18.6%), intralesional steroids 10 (16.9%), traditional 9 (15.3%), and other 3 (5.1%) • Diagnosis and severity assessment: N/A	• No. of subjects: 60 controls • Age: 27.4 ± 10.3 years • Gender: Female 9 (15%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: N/A • Level: 20 ± 8.9 ng/mL • Correlation: N/A	• VDD: N/A • Level: 27.6 ± 10 ng/mL • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 20 ng/ml • Measurement method: Roche Cobase411 system (Roche Diagnostics System, Switzerland)	
Other		

Arasu et al. (2022)		
Study characteristics	• Study type: retrospective, case-control, single-center study • Study duration: March 2013 and February 2020 • Country: Australia	
Participant characteristics	• No. of subjects: 100 FFA • Age: mean 63 years • Gender: Female 100 (100%) • Ethnicity: Caucasian 97 (97%), Asian 2 (2%), African 1 (1%) • BMI: N/A • Comorbidity: At least 1 additional comorbidity 63 (63%) • Smoking: 2 (1%) of the whole cohort • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 100 FPHL • Age: mean 51 years • Gender: Female 100 (100%) • Ethnicity: Caucasian 83 (83%), Asian 16 (16%), African 1 (1%) • BMI: N/A • Comorbidity: At least 1 additional comorbidity 52 (52%) • Smoking: 2 (1%) of the whole cohort • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 20 (20%) • Level: N/A • Correlation: N/A	• VDD: 20 (20%) • Level: N/A • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 20 ng/ml (cutoffs 50 nmol/L, 30-49 nmol/L, 12.5-29 nmol/L and 12.5 nmol/L were used) • Measurement method: N/A	
Other	• Exclusion criteria: Vitamin D supplementation were excluded	

Chen et al. (2022)	
Study characteristics	- Study type: retrospective, descriptive cross-sectional, single-center study - Study duration: January 1, 2009 to February 2, 2021 - Country: USA
Participant characteristics	- No. of subjects: 76 TE (68 with vitamin D results: 45 ATE and 23 CTE) - Age: mean disease onset 12.3 years (pediatric) - Gender: Female 67/76 (88%), Male 9/76 (12%) - Ethnicity: African-American/Black (3%), Asian (3%), Hispanic or Latino (62%), multi-race (3%), and White (28%). - BMI: N/A - Comorbidity: Additional non-dermatologic conditions 32% (24/76) - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: N/A - Disease severity score/ grading: N/A - Alopecia pattern: N/A - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: N/A
Vitamin D data	- TE: VDD 13 (19.1%) - ATE: VDD 7 (15.6 %) - CTE: VDD 6 (26.1 %) - Level: N/A - Correlation: N/A
Vitamin D measurement	- Definition: N/A - Measurement method: N/A
Other	Exclusion criteria: Records without TE diagnosis, with unclear documentation, with a co-existing disease of the scalp or hair, or duplicate records were excluded

Collins et al. (2022)	
Study characteristics	- Study type: retrospective, descriptive cross-sectional, single center study - Study duration: N/A - Country: USA
Participant characteristics	- No. of subjects: 27 CCCA - Age: N/A - Gender: N/A - Ethnicity: Black 27 (100%) - BMI: N/A - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: N/A - Disease severity score/ grading: N/A - Alopecia pattern: N/A - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: specialty alopecia clinic
Vitamin D data	- VDD: 25 (92.5%) - Level: N/A - Correlation: N/A
Vitamin D measurement	- Definition: VDD <20 ng/mL, VDI 21 and 29 ng/mL - Measurement method: N/A
Other	Exclusion criteria: Patients were excluded if they did not have a serum vitamin D level documented or if multivitamin or vitamin D supplementation was recorded in the medical record.

Das (2022)		
Study characteristics	• Study type: case-control, single-center study • Study duration: N/A • Country: India	
Participant characteristics	• No. of subjects: 50 AA • Age: 25.07 ± 7.40 years • Gender: Male 32 (64%), female 18 (36%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: SALT class; S1 = 35 (70%), S2 = 10 (20%), S3 = 5 (10%), mean SALT score 22.3 (calculated) • Alopecia pattern: N/A • FH of alopecia: FH of AA 48 (96%) • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: department of Skin and VD	• No. of subjects: 50 control subjects • Age: 24.48 ± 6.30 years • Gender: Male 30 (60%), female 20 (40%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 15 (30 %) • VDI: 35 (70 %) • Normal: 0 • Level: 12.45 ± 4.80 ng/ml • Correlation: Vitamin D level and SALT score; r = -0.32, p=0.04626	• VDD: 0 • VDI: 20 (40 %) • Normal: 30 (60%) • Level: 33.73 ± 10.02 ng/ml
Vitamin D measurement	• Definition: VDD < 10 ng/ml, VDI 10-30 ng/ml, Normal 30-60 ng/ml • Measurement method: Enhanced chemiluminescence method (ECI) was used	
Other	• Exclusion criteria: patients with following criteria were excluded (a) AA of extra-scalp sites only; (b) with other causes of alopecia i.e.; tinea capitis, androgenic alopecia (male or female pattern), scarring alopecia, traction alopecia, and telogen effluvium; (c) on any topical or oral steroid, immunosuppressive drugs, calcium or vitamin D supplementation, or using any photo- protective measures; (d) with history of any autoimmune or systemic diseases; and (e) with Body mass index ≥25.	

deQueiroz et al. (2022)				
Study characteristics	• Study type: case-control study, single-center • Study duration: N/A • Country: Brazil			
Participant characteristics	• No. of subjects: 7 AA • Age: 44.2 ± 14.9 years • Gender: Female 7 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: Phototype III 42 % • Diet: Dietary restrictions 0 (0 %) • Sun-exposure/ sunscreen usage: Sunscreen use 5 (71.5 %) • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: outpatient dermatology clinic	• No. of subjects: 37 FPHL • Age: 54.8 ± 15.0 years • Gender: Female 37 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: Phototype III 43% • Diet: Dietary restrictions 5 (13%) • Sun-exposure/ sunscreen usage: Sunscreen use 26 (70%) • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: outpatient dermatology clinic	• No. of subjects: 17 TE • Age: 42.8 ± 14.55 years • Gender: Female 17 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: Phototype III 52 % • Diet: Dietary restrictions 3 (17 %) • Sun-exposure/ sunscreen usage: Sunscreen use 14 (82%) • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A	• No. of subjects: 33 control with other skin conditions • Age: 38.8 ± 16.0 years • Gender: Female 37 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: Phototype III 30% • Diet: Dietary restrictions 3 (9%) • Sun-exposure/ sunscreen usage: Sunscreen use 32 (96%)

			Diagnosis and severity assessment: outpatient dermatology clinic	
Vitamin D data	• VDD: 3 (42.9 %) • Level: 20.4 ± 3.9 ng/ml • Correlation: N/A	• VDD: 22 (59.5 %) • Level: 18.0 ± 6.7 ng/ml • Correlation: N/A	• VDD: 9 (52.9 %) • Level: 18.8 ± 6.6 ng/ml • Correlation: N/A	• VDD: 12 (36.4 %) • Level: 22.9 ± 7.6 ng/ml
Vitamin D measurement	• Definition: No VDD: definition • Measurement method: N/A			
Other	• Exclusion criteria: Use of oral vitamin D or iron supplements, topical vitamin D analogs, thyroid disorders, elevated erythrocyte sedimentation rate, recent phototherapy history (in the past 12 months), renal or hepatic insufficiency, malignancies or diagnose of scarring alopecia.			

Gao et al. (2022)		
Study characteristics	• Study type: retrospective, case-control, single-center study • Study duration: January 2016 to May 2020 • Country: China	
Participant characteristics	• No. of subjects: 672 AA • Age: 31.28 ± 14.42 years • Gender: Male 396 (58.92%), female 276 (41.08%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: diagnosed according to the revised standards of the American Journal of Dermatology (AAD), which was established by Olsen et al.	• No. of subjects: 580 healthy subjects (age- and sex-matched) • Age: 30.89 ± 13.0 years • Gender: Male 342 (58.97%), female 238 (41.03%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 102 (15.18%) • VDI: 479 (71.28%) • Normal 91 (13.54%) • Level: 15.73 ± 2.38 ng/ml • Correlation: N/A	• VDD: 37 (6.38%) • VDI: 485 (83.62%) • Normal 58 (10.00%) • Level: 23.63 ± 6.54 ng/ml
Vitamin D measurement	• Definition: VDD: < 8 ng/ml, VDI: 8-30.5 ng/ml, normal > 30.5 ng/ml • Measurement method: enzyme-linked immunosorbent assay method with a Rayto RT-6100 automatic enzyme-labeled instrument and a chemiluminescence immunoassay device (Siemens Centaur XP).	
Other	• Exclusion criteria: Patients who were pregnant or lactating, had other immune diseases, or had incomplete clinical information were excluded	

Goksin (2022)	
Study characteristics	- Study type: retrospective, descriptive cross-sectional, single-center study - Study duration: January 1, 2016 to August 31, 2020 - Country: Turkey
Participant characteristics	- No. of subjects: 218 AA - Age: 27.8 ± 12.3 years - Gender: Male 134 (61.5%), Female 84 (38.5%) - Ethnicity: N/A - BMI: N/A - Comorbidity: Comorbid diseases 51.8% - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: mean 18.1 months (range 1-240 months) - Disease severity score/ grading: N/A - Alopecia pattern: AA 96.3%, AU 3.2%, AT 0.5%, unifocal involvement was more frequent, number of patch was 1 in most of the patients with AA - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: N/A
Vitamin D data	- VDD: 85 (38.9 %) - Level: 15.97 ± 6.52 ng/ml - Correlation: N/A
Vitamin D measurement	- Definition: No VDD: definition - Measurement method: N/A
Other	Exclusion criteria: N/A

Krysiak et al. (2022)		
Study characteristics	- Study type: prospective, case-control, single-center study - Study duration: N/A - Country: Poland	
Participant characteristics	- No. of subjects: 72 MAGA patients - Age: 37 ± 6 years - Gender: Male 72 (100%) - Ethnicity: N/A - Smoking 35% - BMI: 32.9 ± 5.3 kg/m^2 - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: N/A - Disease severity score/ grading: Norwood modification of Hamilton Classification Scale for androgenic alopecia - Alopecia pattern: N/A - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: N/A	- No. of subjects: 75 subjects with normal hair growth (age, gender, BMI, blood pressure, plasma lipid levels and glucose homeostasis markers-matched) - Age: 38 ± 6 years - Gender: Male 75 (100%) - Ethnicity: N/A - Smoking 34% - BMI: 32.4 ± 5.1 kg/m^2 - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A
Vitamin D data	- VDD: N/A - Level: 59.0 ± 12.8 nmol/l ➔ 23.6 ± 5.12 ng/ml - Correlation: N/A	- VDD: N/A - Level: 69.4 ± 14.5 nmol/l ➔ 27.76 ± 5.8 ng/ml
Vitamin D measurement	- Definition: N/A - Measurement method: Electrochemiluminescent analyzer (Cobas e411, Roche Diagnostics, Mannheim, Germany).	
Other	- Inclusion criteria: men (25–50 years old) with: (a) body mass index (BMI) at least 24 kg/m^2, (b) plasma glucose concentration 2 h after 75-g glucose challenge in the range between 140 and 200 mg/dL, and (c) fasting plasma glucose levels in the range between 95 and 125 mg/dL - The exclusion criteria were as follows: diabetes, thyroid disorders or other endocrine disorders; kidney or liver insuf- ficiency; chronic inflammatory or autoimmune disorders; malabsorption syndromes; cardiovascular disease (with the exception of mild arterial hypertension) and other seri- ous disorders. We also excluded individuals treated within 6 months preceding the study with any prescription or over-the-counter drug for more than a week.	

	• Vitamin D levels were converted from nmol/L	

Lim et al. (2022)	
Study characteristics	• Study type: descriptive cross-sectional, single-center study • Study duration: January 2015 and December 2017 • Country: USA
Participant characteristics	• No. of patients: 96 AA (pediatric) • Age: 9 ± 4.4 years • Gender: Female (64%) • Ethnicity: White (48%) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 37 (38.2%) • VDI: 58 (60.4%) • Level: 26.7 ± 7.6 ng/ml • Correlation: N/A
Vitamin D measurement	• Defintion: VDD: <20 ng/ml, VDI: 21-29 ng/ml • Measurement method: N/A
Other	• Exclusion criteria: documented vitamin supplementation, chronic illness, or other autoimmune comorbidities other than AA • Cited reference (J Clin Endocrinol Metab, July 2011, 96(7):1911–1930) was explored for VDD and VDI definitions

Oner and Akdeniz (2022)			
Study characteristics	• Study type: retrospective, descriptive cross-sectional, single-center study • Study duration: November 2018 and January 2021 • Country: Turkey		
Participant characteristics	• No. of patients: 99 AA • Age: 26.1 ± 12.3 years • Gender: Female 25 (25.3 %), male 74 (74.7 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology outpatient clinics and inpatient	• No. of patients: 101 AGA • Age: 25.6 ± 7.3 years • Gender: Female 25 (24.8 %), male 76 (75.2 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology outpatient clinics	• No. of patients: 160 TE • Age: 27.7 ± 8.8 years • Gender: Female 156 (97.5 %), male 4 (2.5 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Diagnosis and severity assessment: dermatology outpatient clinics
Vitamin D data	• VDD: 70 (70.7 %) • Level: 15.7 ± 9.6 ng/ml • Correlation: N/A	• VDD: 79 (78.2 %) • Level: 16.2 ± 8.4 ng/ml • Correlation: N/A	• VDD: 127 (79.4 %) • Level: 14.6 ± 11.1 ng/ml • Correlation: N/A
Vitamin D measurement	• Definition: VDD: < 20 ng/ml • Measurement method: Atellica Solution Immunoassay, Siemens, USA.		
Other	• Selection criteria: N/A		

Tran et al. (2022)			
Study characteristics	• Study type: retrospecitve, case-control study, University of California, Los Angeles Health System • Study duration: 2013 to 2017 • Country: USA		
Participant characteristics	• No. of subjects: 417 AA • Age: mean 45.7 years • Gender: Female 561 (61.6%), male 349 (38.4 %) • Ethnicity: White 378 (41.5 %), asian 124 (13.6 %), black 60 (6.5 %), other/unknown 348 (38.2 %) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 404 AGA • Age: N/A • Gender: N/A • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 3127 controls (age-, gender-, and race-matched) • Age: mean 49.4 years • Gender: Female 3685 (74.5 %), male 1260 (25.5 %) • Ethnicity: White 2862 (57.9 %), asian 373 (7.5 %), black 506 (10.2 %), other/unknown 1204 (24.3 %) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 115 (27.6%) • VDI: 138 (33.1 %) • Normal: 164 (39.3 %) • Level: 28.7 ± 12.1 ng/ml • Correlation: N/A	• VDD: 63 (15.6 %) • VDI: 138 (34.2 %) • Normal 203 (50.2 %) • Level: 31.6 ± 12.8 ng/ml • Correlation: N/A	• VDD: 924 (29.5%) • VDI: 1294 (41.4 %) • Normal 909 (29.1 %) • Level: 25.8 ± 10.9 ng/ml • Correlation: N/A
Vitamin D measurement	• Definition: 0-10 ng/ml, 11-20 ng/ml, 21-30 ng/ml, >30 ng/ml were used as cutoffs, and data were grouped and re-defined as VDD < 20 ng/ml, VDI 21-30 ng/ml, normal > 30 ng/ml • Measurement method: N/A		

Other	• Exclusion criteria: active Vitamin D prescriptions

Yorulmaz et al. (2022)	
Study characteristics	• Study type: retrospective descriptive, single-center study • Study duration: July 2014 and July 2018 • Country: Turkey
Participant characteristics	• No. of subjects: 3028 acute and chronic TE (1688 with vitamin D results) • Age: median 26 years (IQR 20–37) • Gender: Female 2794 (92.3 %), male 234 (7.7 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: medical electronic database of Dermatology department of Ankara Numune Research and Training hospital
Vitamin D data	• VDD: 1219 (72.2 %) • Level: median 14 (IQR 9.77–20.39) ng/ml ➜ 14.72 ± 7.87 ng/ml • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 20 ng/ml • Measurement method: N/A
Other	• Inclusion criteria: included patients with acute and chronic TE, of whom diagnosis was confirmed by pull test, trichogram, and trichoscopy

Abedini et al. (2021)		
Study characteristics	• Study type: case-control, single-center study • Study duration: October 2016 to December 2017 • Country: Iran	
Participant characteristics	• No. of subjects: 50 AA patients • Age: 32.48 ± 12.61 years • Gender: Female 23 (46 %), male 27 (54 %) • Ethnicity: N/A • BMI: 25.75 ± 4.58 kg/m^2 • Comorbidity: history of atopy 15 (30 %) • Smoking: 0 • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 76.32 ± 94.13 months • Disease severity score/ grading: mean SALT score of patients was 67.9 ± 35.47 % (range 3-100 %) • Alopecia pattern: Patchy 17, Ophiasis 6 (12 %), AT 9 (18 %), AU 18 (36 %), Eyebrow 35, eyelash 25, beard 20 • FH of alopecia: FH of AA 8 • Nail involvement: 28 • First/ recurrent episode: N/A • Stable/ active disease: Pull test positive 16 • Treatment information: N/A • Diagnosis and severity assessment: alopecia clinic	• No. of subjects: 50 controls (age, sex, BMI - matched) • Age: 32.26 ± 12.32 years • Gender: Female 23 (46 %), male 27 (54 %) • Ethnicity: N/A • BMI: 25.79 ± 4.35 kg/m^2 • Comorbidity: history of atopy 28 • Smoking: 0 • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 28 (56 %) • VDI: 16 (32 %) • Normal 6 (12 %) • Level: 18.32 ± 8.55 ng/ml • Correlation: Vitamin D depletion was not correlated with the severity, duration, or activity phase of the disease or the type of hair loss.	• VDD: 23 (46 %) • VDI: 14 (28 %) • Normal 13 (26 %) • Level: 23.21 ± 8.71 ng/ml
Vitamin D measurement	• Definitions: VDD: < 20 ng/ml, VDI: 20 to 30 ng/ml • Measurement method: Commercial Enzyme-Linked Immunosorbent Assay (ELISA) kits (LIAISON, Italy), which quantitatively determine the 25-(OH)-D3 level via chemiluminescent immunoassay (CLIA) technology.	
Other	• Exclusion criteria: a history of intralesional steroids' injection within the last month; use of systemic corticosteroids within the last year; use of immunosuppressive drugs within the last three months; calcium and vitamin D supplementation; consumption of	

| | bisphosphonates or cholesterol-lowering drugs; phototherapy treatment; pregnancy or lactation; and any coexisting inflammatory disease other than AA, diabetes, or smoking. |

Alamoudi et al. (2021)	
Study characteristics	• Study type: retrospective descriptive, single-center study • Study duration: N/A • Country: Saudi Arabia
Participant characteristics	• No. of subjects: 177 AA patients • Age: 28.37 ± 12.68 years • Gender: Male 85 (48%), female 92 (52%) • Ethnicity: N/A • BMI: 26.44 ± 7.5 kg/m^2 • Comorbidity: At least 1 comorbidity 92 (52.0 %) • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: Patchy (60.45%), AU (9%), AT (7%) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: active disease 67 (37.8%), stable 49 (27.7%), unknown 61 (34.5%) • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 110 (62%) • Level: 49.14 ± 29.09 nmol/L ➔ 19.69 ± 11.65 ng/mL • Correlation: N/A
Vitamin D measurement	• Definition: VDD < 50 nmol/L (20 ng/ml) • Measurement method: N/A
Other	• Selection criteria: N/A

Alizadeh et al. (2021)		
Study characteristics	• Study type: case-control, single-center study • Study duration: October 2018–March 2019 (Autumn and winter) • Country: Iran	
Participant characteristics	• No. of subjects: 83 CTE patients • Age: median 35 years • Gender: Female 83 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: Skin type III-IV • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Dermatology Outpatient Clinic	• No. of subjects: 83 healthy controls (age- and gender-matched) • Age: median 35 years • Gender: Female 83 (100 %) • Ethnicity: N/A • BMI: N/A • Skin type III-IV • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A
Vitamin D data	• VDD: 29 (34.9 %) • Level: 23.83 ± 10.12 ng/ml • Correlation: Hair loss duration and vitamin D level: r=-0.047, p=0.673	• VDD: 32 (38.6 %) • Level: 28.53 ± 12.25 ng/ml
Vitamin D measurement	• Definition: VDD: <20 ng/ml • Measurement method: chemiluminescence method with LIASON system (Diasorin Deutschland GmbH, Dietzenbach, Germany).	
Other	• Exclusion criteria: farmers or villagers due to more sun exposure, very light-skin or dark-skin phototypes, pregnant and menopause women, unusual diets (such as vegetarian, ketogenic, etc.), and history of the following items during the last 6 months: febrile illnesses, severe physical or emotional stresses, surgery, supplement therapy, drugs incriminated in hair loss (e.g. chemotherapeutic agents, anticonvulsants, retinoids, anticoagulants, antidepressants, and antihypertensive medications), liver, kidney, thyroid, gastrointestinal, or any inflammatory disease associated with elevated erythrocyte-sedimentation rate or C-reactive protein. • Median and range of vitamin D levels were converted to mean and standard deviations.	

Conic et al. (2021)					
Study characteristics	• Study type: retrospective, descriptive cross-sectional, single-center study • Study duration: May 2009 to April 2010 • Country: USA				
Participant characteristics	• No. of subjects: 77 AA • Age: median 37.2 years • Gender: Male 23 (29.9 %), female 54 (70.1 %) • Ethnicity: White and middle eastern 54 (70 %), Black 13 (17 %), Hispanic 0, Asian and other 3 (3.9 %) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A	• No. of subjects: 73 AGA • Age: median 53.2 years • Gender: Male 8 (11 %), female 65 (89 %) • Ethnicity: White and middle eastern 65 (90 %), Black 4 (5.6 %), Hispanic 1 (1.4 %), Asian and other 1 (1.4 %) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A	• No. of subjects: 121 TE • Age: median 46.9 years • Gender: Male 1 (0.83 %), female 120 (99.2 %) • Ethnicity: White and middle eastern 92 (77 %), Black 13 (11 %), Hispanic 3 (2.5 %), Asian and other 9 (7.5 %) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A	• No. of subjects: 58 LPP • Age: median 56.6 years • Gender: Male 3 (5.2 %), female 55 (94.8 %) • Ethnicity: White and middle eastern 47 (82 %), Black 6 (11 %), Hispanic 0, Asian and other 1 (1.8 %) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A	• No. of subjects: 29 CCCA • Age: median 55.2 years • Gender: Male 0, female 29 (100 %) • Ethnicity: White and middle eastern 0, Black 27 (96 %), Hispanic 0, Asian and other 0 • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A

	• Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• Diagnosis and severity assessment: N/A	• Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• Diagnosis and severity assessment: N/A	• First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A
Vitamin D data	• VDD: 22 (28.6 %) • VDI: 26 (33.8 %) • Normal 29 (37.7 %) • Level: median 27.7 ng/ml • Correlation: N/A	• VDD: 18 (24.7 %) • VDI: 23 (31.5 %) • Normal 32 (43.8 %) • Level: median 28.5 ng/ml • Correlation: N/A	• VDD: 38 (31.4 %) • VDI: 41 (33.9 %) • Normal 42 (34.7 %) • Level: median 25.2 ng/ml • Correlation: N/A	• VDD: 20 (34.5 %) • VDI: 21 (36.2 %) • Normal 17 (29.3 %) • Level: median 24.6 ng/ml • Correlation: N/A	• VDD: 16 (55.2 %) • VDI: 7 (24.1 %) • Normal 6 (20.7 %) • Level: median 18.7 ng/ml • Correlation: N/A
Vitamin D measurement	• Definition: Cutoffs of ≤ 12 ng/mL, > 12-20 ng/mL, > 21-29 ng/mL, and > 30 ng/mL were used, and we grouped and re-defined as follow: VDD: ≤ 20 ng/mL, VDI: > 21-29 ng/mL, normal > 30 ng/mL • Measurement method: N/A				
Other	• Exclusion criteria: patients taking vitamin D supplements at the time of their visit were excluded.				

Danane et al. (2021)	
Study characteristics	• Study type: prospective, descriptive, single-center study • Study duration: December 2020 to June 2021 • Country: India
Participant characteristics	• No. of subjects: 50 AGA • Age: mean 24 years • Gender: Male 50 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology OPD
Vitamin D data	• VDD: 41 (82%) • VDI: 7 (14%) • Level: N/A • Correlation: N/A
Vitamin D measurement	• Definition: Normal levels of serum vitamin D is >30 ng/ml. Vitamin D deficiency is defined as 25(OH)D of <20 ng/ml. vitamin D insufficiency is recognized as 25(OH)D of 21-29 ng/ml. • Measurement method: N/A
Other	• Exclusion criteria: drug induced alopecia, chemotherapy induced alopecia, and alopecia due to other causes.

El-Tahlawy et al. (2021)		
Study characteristics	- Study type: case-control, single-center study - Study duration: N/A - Country: Egypt	
Participant characteristics	- No. of subjects: 30 MAGA - Age: N/A - Gender: Male 30 (100 %) - Ethnicity: N/A - BMI: N/A - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: N/A - Disease severity score/ grading: N/A - Alopecia pattern: N/A - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: dermatology department	- No. of subjects: 30 healthy men (age- and gender-matched) - Age: N/A - Gender: Male 30 (100 %) - Ethnicity: N/A - BMI: N/A - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A
Vitamin D data	- VDD: N/A - Level: 37.1 ± 11.9 ng/ml - Correlation: no correlation between vitamin D level and degree of hair loss	- VDD: N/A - Level: 44.2 ± 9.6 ng/ml
Vitamin D measurement	- Definition: N/A - Measurement method: N/A	
Other	Selection criteria: N/A	

Jasim et al. (2021)		
Study characteristics	• Study type: prospective, case-control, single-center study • Study duration: January 1, 2019 to December 31, 2019 • Country: Iraq	
Participant characteristics	• No. of subjects: 50 FPHL • Age: N/A • Gender: Female 50 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: Ludwig's classification grade I 19 (38.0%), grade II 22 (44.0%), grade III 9 (18.0%) • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Department of Dermatology	• No. of subjects: 50 healthy controls • Age: N/A • Gender: Female 50 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 34 (68%) • VDI: 30% • Normal 2% • Level: 22.8 ± 11.5 ng/ml • Correlation: N/A	• VDD: N/A • VDI: 11 (22%) • Level: 34.4 ± 5.7 ng/ml
Vitamin D measurement	• VDD: <20 ng/ml, VDI: 20-30 ng/ml • Measurement method: N/A	
Other	• Selection criteria: N/A	

Kerkemeyer et al. (2021)	
Study characteristics	• Study type: retrospective descriptive study • Study duration: November 2017 and March 2020 • Country: Australia
Participant characteristics	• No. of subjects: 84 male AGA (31 with vitamin D results) • Age: mean 28.7 (range 14.0-49.0) years • Gender: Male 84 (100 %) • Ethnicity: European 43 (51.2 %), South and Central Asian (eg, Indian) 25 (29.8 %), Southeast Asian (eg, Vietnamese) 4 (4.8 %), Northeast Asian (eg, Chinese) 3 (3.6 %), North African and Middle Eastern 8 (9.5 %), Sub-Saharan African 1 (1.7 %) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: Baseline sinclair grade; 2.0 =15 (17.6 %), 2.5 = 6 (7.1 %), 3.0 = 40 (47.6 %), 3.5 = 0 (0.0 %), 4.0 = 18 (21.4 %), 4.5 = 2 (2.4 %), 5.0 = 3 (3.6 %) • Alopecia pattern: N/A • FH of alopecia: FH of AGA 70 (83.3 %), AA 2 (2.4 %), none 10 (11.9%), not reported 4 (4.8%) • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: 5-point Sinclair scale by 2 independent blinded dermatologists using standardized clinical photographs
Vitamin D data	• VDD: 9 (29.0%) • Level: N/A • Correlation: N/A
Vitamin D measurement	• VDD: < 50 nmol/L (< 20 ng/ml) • Measurement method: N/A
Other	• Exclusion criteria: N/A

Lizarondo et al. (2021)		
Study characteristics	• Study type: case-control, single-center study • Study duration: December 2017 to July 2018 • Country: Philippines	
Participant characteristics	• No. of subjects: 29 AA patients • Age: 31.48 ± 10.82 years • Gender: Male 10 (34.5%), female 19 (65.5%) • Ethnicity: N/A • BMI: 23.41 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: skin phototype III = 5, IV = 24, V = 2 • Diet: N/A • Sun-exposure/ sunscreen usage: photoprotection (umbrella, caps or hats, and long clothing) present = 21 absent = 8; average time of sun exposure per week; <30 min = 16 (55.2 %), ≥ 30 min = 13 (44.8 %) • Disease duration: Duration of current episode: <3 months = 13, 3-12 months = 11, 12-24 months = 3, 2-5 years = 1, >5 years = 1 • Disease severity score/ grading: SALT class; S1 = 20 (68.97%), S2 = 5 (17.24%), S3 = 2 (6.90%), S4 = 2 (6.90%), mean SALT score 25.24 (calculated) • Alopecia pattern: patchy 25, ophiasis 2, AT 1, AU 1 • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: Active 28, inactive 1 • Treatment information: N/A • Diagnosis and severity assessment: Department of Dermatology	• No. of subjects: 29 healthy controls (age-, sex-, and sun exposure-matched) • Age: 31.86 ± 10.51 years • Gender: Male 10 (34.5%), female 19 (65.5%) • Ethnicity: N/A • BMI: 24.07 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: Skin phototype III 3 IV 24 V 2 • Diet: N/A • Sun-exposure/ sunscreen usage: Photoprotection (umbrella, caps or hats, and long clothing) present = 21, absent = 8; Average time of sun exposure per week; <30 min = 16 (55.2 %), ≥ 30 min = 13 (44.8 %)
Vitamin D data	• VDD: 10 (34.48%) • VDI: 13 (44.83%) • Normal 6 (20.69%) • Level: 24.41 ± 6.87 ng/ml • Correlation: vitamin D level and SALT score, r_s = -0.3277, p-value = 0.09; vitamin D level and type of AA, r_s = -0.0875, p-value = 0.65; vitamin D level and disease duration, r_s = -0.0511, p-value = 0.79	• VDD: 5 (17.24%) • VDI: 17 (58.62%) • Normal 7 (24.14%) • Level: 24.68 ± 6.68 ng/ml
Vitamin D measurement	• Definition: VDD < 20 ng/ml, VDI 21-29 ng/ml, and normal 30-100 ng/ml • Measurement method: N/A	

| Other | • Exclusion criteria: (1) a history of treatment within 4 weeks of the following: corticosteroids (systemic, intralesional, and topical), vitamin D and calcium supplements, antiepileptics, antineoplastic drugs, antibiotics (clotrimazole and rifampicin), antihypertensives, antiretroviral drugs, and endocrine drugs; (2) having the following comorbidities: obesity (body mass index ≥ 30 kg/m^2), dermatologic disorders associated with low vitamin D levels (vitiligo, psoriasis, atopic dermatitis, and chronic urticaria), atopy (bronchial asthma and allergic rhinitis), cancer, diabetes mellitus, thyroid disorders, and other autoimmune diseases (multiple sclerosis, systemic lupus erythematosus, rheumatoid arthritis, and scleroderma or systemic sclerosis); (3) pregnant, nursing women; (4) smokers; and (5) daily sunscreen users. |

Naser et al. (2021)		
Study characteristics	• Study type: prospective, case-control, single-center study • Study duration: March to November 2017 • Country: Baghdad	
Participant characteristics	• No. of subjects: 60 CTE • Age: 32.6 ± 6.47 years • Gender: Female 60 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology outpatients clinic	• No. of subjects: 60 healthy controls (age- and gender-matched) • Age: 41.3 ± 4.59 years • Gender: Female 60 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 8 (13.3) • VDI: 46 (76.6) • Normal 6 (10) • Level: 20.14 ± 7.24 ng/ml • Correlation: N/A	• VDD: 13 (21.6) • VDI: 22 (36.6) • Normal 25 (41.6) • Level: 36.13 ± 22.46 ng/ml
Vitamin D measurement	• Definition: VDD: <20 ng/ml, VDI: 20-29 ng/ml, normal ≥ 30 ng/ml • Measurement method: competitive enzyme-linked Immunosorbent assay kit	
Other	• Exclusion criteria: patients not have diagnostic criteria; there are systemic disease and or scalp disease that could be lead to hair loss; patients on medications that might be implicated to hair loss (e.g antithyroid, anticoagulants, anticonvulsants, retinoid, antihypertensive, or antidepressants); individual taking drug containing vitamin D, iron, dietary supplementations; newly stressful conditions during the last 6 months like physiological stress, high fever, surgical trauma, chronic systemic disease, bleeding pregnancy, delivery, emotional stress or patient has high CRP equal or more than 4.	

Conic et al. (2020)		
Study characteristics	• Study type: cross-sectional study, aggregated health record data (Explorys (Cleveland, OH, USA)) • Study duration: through April 1, 2019 • Country: USA	
Participant characteristics	• No. of subjects: 3510 pediatric AA • Age: < 10 years = 920 (26.2 %), 10-18 years = 2590 (73.8 %) • Gender: Male 1570 (44.7%), female 1940 (55.3%) • Ethnicity: Caucasian 1860 (53.0%), African American 650 (18.5%), Other 2160 (28.5%) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 8310710 pediatric patients without AA • Age: < 10 years = 3040100 (36.6 %), 10-18 years = 5270610 (63.4 %) • Gender: Male 4291770 (51.6%), female 4018940 (48.4%) • Ethnicity: Caucasian 4432400 (53.3%), African American 1027430 (12.4%), Other 2850880 (34.3%) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 5.1% • Level: N/A • Correlation: N/A	• VDD: 0.4% • Level: N/A • Correlation: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: N/A	
Other	• Selection criteria: N/A	

Mohammad et al. (2020)		
Study characteristics	• Study type: descriptive cross-sectional, single-center study • Study duration: 2015 and 2016 • Country: Iran	
Participant characteristics	• No. of subjects: 50 TE (unspecified) • Age: N/A • Gender: 50 women (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Dermatology clinic of Rasool Akram Hospital	• No. of subjects: 50 controls (age- and gender-matched) • Age: N/A • Gender: 50 women (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: N/A • Level: 23.82 ± 9.96 ng/ml • Correlation: N/A	• VDD: N/A • Level: 23.39 ± 11.40 ng/ml
Vitamin D measurement	• Definition: N/A • Measurement method: N/A	
Other	• Exclusion criteria: patients with other hair disorders or other causes of hair loss (such as tineacapitis, trichotillomania, secondary syphilis, androgenetic hair loss in women, scarring alopecia); patients with autoimmune disorders or systemic diseases (lupus, rheumatoid arthritis, scleroderma, thyroiditis, hyperthyroidism and hypothyroidism); taking supplements or receiving hair loss treatments during the last three months; current consumption of alcohol, diuretics or laxatives containing Mg.	

Sanke et al. (2020)		
Study characteristics	• Study type: case-control, single-center study • Study duration: N/A • Country: India	
Participant characteristics	• No. of subjects: 50 MAGA • Age: 21.17 ± 3.66 years • Gender: Male 50 (100 %) • Ethnicity: N/A • BMI: 23.9 ± 3.6 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: average sun exposure 2.36 ± 1.2 hours • Disease duration: 26.75 ± 18.19 months • Disease severity score/ grading: Hamilton Norwood scale III 14 (25%), grade IV 19 (33%), grade V 20 (35%), and grade VI 4 (7%) • Alopecia pattern: Initial site of hair loss: frontal 9 (18%), temporal 37 (74%), vertex 4 (8%) • FH of alopecia: 24 (48%) • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: gradual (>5 years) 16 (32%), moderate (1–5 years) 20 (40%), rapid (0–1 year) 14 (28%) • Treatment information: N/A • Diagnosis and severity assessment: dermatology outpatient clinic	• No. of subjects: 50 controls (age-, sex-, socioeconomic status, and outdoor exposure-matched) • Age: N/A • Gender: Male 50 (100 %) • Ethnicity: N/A • BMI: 22.4 ± 2.4 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: Average sun exposure 3.23 ± 1.6 hours
Vitamin D data	• VDD: 27 (54%) • VDI: 23 (46%) • Normal 0 • Level: 20.10 ± 4.8 ng/ml • Correlation: N/A	• VDD: 4 (8%) • VDI: 14 (28 %) • Normal 32 (64%) • Level: 29.34 ± 5.6 ng/ml • Correlation: N/A
Vitamin D measurement	• Definition: vitamin D cutoffs of < 10 ng/ml, 10-20 ng/ml, 20-30 ng/ml and > 30 ng/ml were used in the study, and we grouped and redefined as follow: VDD < 20 ng/ml, VDI 20-30 ng/ml, normal > 30 ng/ml • Measurement method: radioimmunoassay technique	
Other	• Selection criteria: N/A	

| | • Information regarding the prevalence of VDD and VDI were obtained from both the maintext and bar graphs. The graphical error of 5 cases with normal vitamin D level was recognized and ignored as no case with normal vitamin D level was reported in the maintext. |

Sokmen (2020)	
Study characteristics	• Study type: retrospective, descriptive cross-sectional, single-center study • Study duration: January 2016 to December 2019 • Country: Turkey
Participant characteristics	• No. of subjects: 151 TE • Age: median 29 (18 – 67) years • Gender: Female 151 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: DM 11.9%, HT 9.9%, hypothyroid 7.9%, bipolar disorder 7.9%, absence 62.4 % • Smoking: 23.2 % • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology outpatient clinic
Vitamin D data	• VDD: 143 (97.3 %) • Level: 11.7 ± 7.22 ng/ml • Correlation: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: N/A
Other	• Selection criteria: age ≥ 18 years, applying for hair loss, admitting dermatology outpatient clinic with TE ICD diagnosis code, and having at least one thyroid function test (TSH, free T4), serum vitamin D, vitamin B12 tests; exclusion criteria: the reason for hair loss other than TE is stated in the patient anamnesis, inadequate data about patients, having cancer, usage of chemotherapy.

Zhao et al. (2020)				
Study characteristics	• Study type: case-control, single-center study • Study duration: N/A • Country: China			
Participant characteristics	• No. of subjects: 443 AA patients • Age: 41.26 ± 14.10 years • Gender: 164 male, 279 female • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment:	• No. of subjects: 657 FPHL patients • Age: 32.59 ± 10.51 years • Gender: Female 657 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A	• No. of subjects: 777 MAGA patients • Age: 29.89 ± 7.02 years • Gender: Male 777 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A	• No. of subjects: 2070 normal controls; age 41.76 ± 11.25 years • 1064 male; age 41.69 ± 11.29 years • 1006 female; age 41.83 ± 11.22 years • Gender: male 1065, female 1006 • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A

	dermatologist from Huashan hospital	• Diagnosis and severity assessment: dermatologist from Huashan hospital	• Diagnosis and severity assessment: dermatologist from Huashan hospital	
Vitamin D data	• VDD: N/A • Level: 46.80 (45.20, 48.19) nmol/L ➔18.72 (18.08 to 19.28) ng/ml ➔ 18.69 ± 0.89 ng/ml • Correlation: N/A	• VDD: N/A • Level: 47.90 (46.79, 49.20) nmol/L ➔ 19.16 (18.72 to 19.68) ng/ml ➔ 19.18 ± 0.71 ng/ml • Correlation: N/A	• VDD: N/A • Level: 50.00 (48.90, 51.40) nmol/L ➔ 20 (19.56 to 20.56) ng/ml ➔ 20.04 ± 0.74 ng/ml • Correlation: N/A	• All controls: 52.70 nmol/L (51.60, 53.70) ➔ 21.08 (20.64 to 21.48) ng/ml ➔ 21.07 ± 0.62 ng/ml • Female control: 52.35 nmol/L (50.70, 53.80) ➔ 20.94 (20.28 to 21.52) ng/ml ➔ 20.91 ± 0.92 ng/ml • Male control: 53.05 nmol/L (51.55, 54.60) ➔ 21.22 (20.62 to 21.84) ng/ml ➔ 21.23 ± 0.90 ng/ml
Vitamin D measurement	• Definition: N/A • Measurement method: Rayto RT- 6000 automatic enzyme-labeled instrument in the nuclear department of Huashan Hospital.			
Other	• Selection criteria: 18-69 years old, no major cardiovascular, liver, kidney, or digestive disease, no treatment for alopecia one month before testing, no oral vitamin D supplementation one month before testing, patients with other skin disorders and/or another type of alopecia (scarring alopecia, traction alopecia, secondary syphilis, and telogen effluvium) were excluded from the study, and patients with osteoporosis or other metabolic bone diseases and autoimmune or systemic diseases (SLE, rheumatic arthritis, scleroderma, thyroiditis, hyperthyroidism, hypothyroidism) were also excluded. • Median IQR was converted to mean and SD			

Conic et al. (2019)						
Study characteristics	• Study type: retrospective, cross-sectional descriptive, single-centre chart review • Study duration: 2004 to 2016 • Country: USA					
Participant characteristics	• No. of subjects: 18 AA • Age: 71.83 ± 6.34 years • Gender: Female 15 (83.3%), male 3 (16.7%) • Ethnicity: White 4 (22.2%), African American 1 (5.6%), other/unknown 13 (72.2%) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/sunscreen usage: N/A	• No. of subjects: 27 FPHL • Age: 70.26 ± 4.99 years • Gender: Female 27 (100%), male 0 • Ethnicity: White 14 (51.6%), African American 5 (18.5%), other/Unknown 8 (29.6%) • BMI: N/A • Stable 11 (40.7%), worse 9 (33.3%) • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/sunscreen usage: N/A	• No. of subjects: 70 TE • Age: 71.07 ± 5.35 years • Gender: Female 68 (97.1%), male 2 (2.9%) • Ethnicity: White 53 (75.7%), African American 5 (7.1%), other/Unknown 12 (17.1%) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/sunscreen usage: N/A • Disease duration: N/A	• No. of subjects: 37 LPP • Age: 69.24 ± 3.11 years • Gender: Female 37 (100%), male 0 • Ethnicity: White 25 (67.6%), African American 3 (8.1%), other/unknown 9 (24.3%) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/sunscreen usage: N/A • Disease duration: N/A	• No. of subjects: 7 FFA • Age: 68.86 ± 3.24 years • Gender: Female 7 (100%), male 0 • Ethnicity: White 6 (85.7%), African American 1 (14.3%), other/unknown 0 • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/sunscreen usage: N/A • Disease duration: N/A	• No. of subjects: 4 CCCA • Age: 67.25 ± 1.26 years • Gender: Female 4 (100%), male 0 • Ethnicity: White 0, African American 4 (100%), other/unknown 0 • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/sunscreen usage: N/A • Disease duration: N/A • Disease severity

	• Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: stable 9 (50%), worse 6 (33.3%) • Treatment information: N/A • Diagnosis and severity assessment: N/A	• Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: stable 22 (31.4%), worse 39 (55.7%) • Treatment information: N/A • Diagnosis and severity assessment: N/A	• Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: stable 11 (29.7 %), worse 22 (59.5 %) • Treatment information: N/A • Diagnosis and severity assessment: biopsy-confirmed	• Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: stable 4 (57.1 %), worse 1 (14.3 %) • Treatment information: N/A • Diagnosis and severity assessment: biopsy-confirmed	score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: stable 1 (25 %), worse 2 (50 %) • Treatment information: N/A • Diagnosis and severity assessment: biopsy-confirmed
Vitamin D data	• VDD: 1 (5.6%) • Level: N/A • Correlation: N/A	• VDD: 4 (14.8%) • Level: N/A • Correlation: N/A	• VDD: 20 (28.6%) • Level: N/A • Correlation: N/A	• VDD: 11 (29.7%) • Level: N/A • Correlation: N/A	• VDD: 1 (14.3%) • Level: N/A • Correlation: N/A	• VDD: 3 (75%) • Level: N/A • Correlation: N/A

Vitamin D measurement	• Definition: N/A • Measurement method: N/A
Other	• No exclusion criteria provided

El-Ghareeb (2019)		
Study characteristics	• Study type: case-control, single-center study • Study duration: N/A • Country: Egypt	
Participant characteristics	• No. of subjects: 20 AA • Age: N/A • Gender: N/A • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 20 healthy persons (age-matched) • Age: N/A • Gender: N/A • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 7 (35 %) • Level: 22.35 ± 7.45 ng/ml • Correlation: a significant negative correlation of serum 25(OH)D levels in correlation to SALT scores in patients with AA in the case group	• VDD: N/A • Level: 34.78 ± 11.59 ng/ml
Vitamin D measurement	• Definition: VDD: < 20 ng/ml, VDI: 20-30 ng/ml • Measurement method: electrochemiluminescence (Elecsys; Roche Diagnostics, Indianapolis, USA).	
Other	• Exclusion criteria: N/A	

Kondrakhina et al. (2019)		
Study characteristics	• Study type: case-control, single-center study • Study duration: January 2017 and December 2018 • Country: Russia	
Participant characteristics	• No. of subjects: 50 MAGA • Age: 26.2 ± 5.3 years • Gender: Male 50 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 3.2 ± 1.1 years • Disease severity score/ grading: Early (Norwood Hamilton class I-II) 24 (48%) and severe(Norwood Hamilton class III 16 (32%), and IV 10 (20%)) • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: State Scientific Center for Dermatovenereology and Cosmetology (GNTSDK) of the Ministry of Health of Russia	• No. of subjects: 25 Control (age- and origin-matched) • Age: N/A • Gender: N/A • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: N/A • Level: Median 21 (19–32) ng/ml ➔ 24 ± 9.64 ng/ml • Correlation: N/A	• VDD: N/A • Level: Median 45 (35–59) ng/ml ➔ 46.33 ± 17.79 ng/ml • Correlation: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: enzyme immunoassay and immunoluminescent analysis, as well as high-performance liquid chromatography with mass spectrometry, were used.	
Other	• Exclusion criteria were other forms of alopecia, as well as cases of hair loss as a complication of another (main) disease. The criteria for inclusion in the control group were normal indicators of the trichogram of the scalp, the absence (at the time of the	

| | study) of other dermatological diseases, as well as the absence of a history of parents and close relatives with a clinical picture of alopecia. |

Marahatta et al. (2019)		
Study characteristics	• Study type: case-control, single-center study • Study duration: October 2015 to September 2016 • Country: Nepal	
Participant characteristics	• No. of subjects: 30 AA patients • Age: 28.37 ± 10.07 years • Gender: Male 16 (51.6%), female 14 (48.3%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: SALT score = 3.56 ± 3.50 • Alopecia pattern: scalp 29 (96.7 %), face 8 (26.6 %) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: first episode 19 (63.3 %), recurrent episodes 11 (36.7 %) • Stable/ active disease: gradual 17 (56.7 %), rapid 13 (43.3 %) • Treatment information: N/A • Diagnosis and severity assessment: consultant dermatologist of the department	• No. of subjects: 30 healthy individuals (age- and gender-matched) • Age: 30.50 ± 9.03 years • Gender: Male 15 (48.4%), female 15 (51.7%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 25 (83.3%) • Level: 21.22 ± 25.44 ng/ml • Correlation: vitamin D level and SALT score, r = -0.026, p-value = 0.89; vitamin D level and AA grade, r = -0.102, p-value = 0.59	• VDD: 16 (53.3%) • Level: 30.90 ± 11.13 ng/ml
Vitamin D measurement	• VDD: ≤ 20 ng/ml • Measurement method: competitive chemiluminescence methods	
Other	• Exclusion criteria: subjects not willing to participate in the study, known case of chronic renal or liver disease, pregnant or lactating, any subject treated with a topical, intralesional or systemic agent in the past month which is likely to cause hair re-growth were excluded from the study.	

Namdar and Arikan (2019)		
Study characteristics	• Study type: case-control, single-center study • Study duration: N/A • Country: Turkey	
Participant characteristics	• No. of subjects: 60 AA • Age: 31.4 ± 10.03 years • Gender: Male 30 (50 %), female 30 (50 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 11.63 months • Disease severity score/ grading: SALT class; S1 = 43 (71.7%), S2 = 17 (28.3 %), mean SALT score 19.44 (calculated) • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Dermatology clinic	• No. of subjects: 61 controls without chronic or dermatological diseases • Age: 36.61 ± 10.08 years • Gender: Male 34 (55.7 %), female 27 (44.3 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 52 (86.7%) • VDI: 8 (13.3%) • Normal 0 • Level: 13.1 ± 6.29 ng/ml • Correlation: N/A	• VDD: 35 (57.4%) • VDI: 14 (23.0%) • Normal 12 (19.7%) • Level: 19.23 ± 8.81 ng/ml
Vitamin D measurement	• Definition: VDD: < 20 ng/mL, VDI: 20-29 ng/mL, normal > 30 ng/mL • Measurement method: N/A	
Other	• Exclusion criteria: Those who took vitamin D or calcium supplements in the last 3 months, those with renal disease, those who were pregnant, breastfeeding and menopausal for women, and those who received phototherapy treatment in the last 6 months • Data were obtained from bar graphs	

Rehman et al. (2019)		
Study characteristics	• Study type: case-control, single-center study • Study duration: November 2016 to October 2017 • Country: India	
Participant characteristics	• No. of subjects: 135 AA • Age: 26 ± 12.89 years • Gender: Male 91 (67.41%), female 44 (32.59%) • Ethnicity: N/A • BMI: 20.43 ± 2.48 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 1.32 ± 2.44 years • Disease severity score/ grading: SALT class; S1 = 52 (38.52%), S2 = 35 (25.93%), S3 = 17 (12.59%), S4 = 11 (8.15%), S5 = 7 (5.19%), mean SALT score 38.09 (calculated) • Alopecia pattern: patchy 97 (71.85%), ophiasis 21 (15.56%), reticular 10 (7.41%), AT 4 (2.96%), AU 3 (2.22%), beard only 13 (9.62%), scalp 84 (62.22) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: relapsing 18 (13.33%), first episode 117 (86.67%) • Stable/ active disease: active 90 (66.67%), stable 45 (33.33) • Treatment information: N/A • Diagnosis and severity assessment: Dermatology Outpatient Department	• No. of subjects: 135 controls (age- and sex-matched) • Age: 26 ± 13.20 years • Gender: Male 91 (67.41%), female 44 (32.59%) • Ethnicity: N/A • BMI: 20.72 ± 2.34 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 51 (37.78%) • VDI: 47 (34.81%) • Normal 37 (27.41%) • Level: 22.87 ± 10.03 ng/ml • Correlation: vitamin D levels and SALT score, r= -0.474, p=0.000; vitamin D levels and AA extent, r = -0.297; Vitamin D levels and AA pattern, r = -0.273	• VDD: 32 (23.70%) • VDI: 46 (34.07%) • Normal 57 (42.2%) • Level: 27.34 ± 10.54 ng/ml
Vitamin D measurement	• Definitions: VDD: <20 ng/ml, VDI: 20–29.99 ng/ml, normal ≥30 ng/ml • Measurement method: N/A	

Other	• Exclusion criteria: vitamin D supplementation, concurrent or family history of autoimmune diseases, women wearing veil, frequent ingestion of alcohol, gastrointestinal problems, bone or renal disease, or sarcoidosis or any other metabolic systemic diseases treated with systemic steroids, barbiturates, bisphosphonates, sulfasalazine, and psoralen with ultraviolet A/ultraviolet B therapy in the past 3 months, pregnancy or lactation, and obesity defined by body mass index (BMI:) ≥ 25 kg/m^2.

Siddappa et al. (2019) – adult AA		
Study characteristics	• Study type: retrospective, case-control, single-center study • Study duration: December 2014 to November 2015 • Country: India	
Participant characteristics	• No. of subjects: 100 AA • Age: 24.52 ± 10.06 years • Gender: males 72 (72%), female 28 (28%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: SALT class; S1 = 75 (99 %), S3 = 1 (1 %), mean SALT score 13.14 (calculated) • Alopecia pattern: scalp = 63, beard = 24, scalp + beard = 8, scalp + eyebrow = 4, scalp + beard + eyebrow = 1 • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: new cases 66 (66 %), old cases 34 (34 %) • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: outpatient department of dermatology, venereology, and leprology	• No. of subjects: 100 healthy controls (age- and sex-matched) • Age: 28.96 ± 11.49 years • Gender: Males 58 (58%), female 42 (42%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 64 (64%) • VDI: 26 (26%) • Normal 10 (10%) • Level: 18.90 ± 8.32 ng/ml • Correlation: vitamin D levels and SALT scores, r = -0.298, p < 0.05	• VDD: 38 (38%) • VDI: 26 (26%) • Normal 36 (36%) • Level: 28.21 ± 18.32 ng/ml
Vitamin D measurement	• Definition: VDD < 20 ng/ml, VDI 20-29.9 ng/ml, normal >30 ng/ml • Measurement method: chemiluminescence immunoassay method	
Other	• Selection criteria: N/A	

Siddappa et al. (2019) – pediatric AA		
Study characteristics	• Study type: case-control, single-center study • Study duration: February 2015 to July 2015 (Spring and summer) • Country: India	
Participant characteristics	• No. of subjects: 30 AA (pediatric) • Age: 11.13 ± 4.17 years • Gender: female 12 (40%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: Scalp = 25, scalp + eyebrow = 4, eyebrow = 1 • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Outpatient Department of Dermatology, Venereology and Leprology	• No. of subjects: 30 healthy controls (age- and gender- matched) • Age: 11.46 ± 4.41 years • Gender: female 12 (40%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 22 (73.3%) • VDI: 6 (20%) • Normal 2 (6.7 %) • Level: 17.21 ± 6.57 ng/ml • Correlation: vitamin D levels and SALT scores, r = −0.379, p-value < 0.05	• VDD: 14 (46.7%) • VDI: 8 (26.7 %) • Normal 8 (26.7 %) • Level: 25.03 ± 13.84 ng/ml
Vitamin D measurement	• Definition: VDD: <20 ng/ml, VDI: 20-29.99 ng/ml, normal >30 ng/ml • Measurement method: N/A	
Other	• Exclusion criteria: patients with other causes for alopecia (such as tinea capitis, androgenetic alopecia, trichotillomania, scarring alopecia, and traction alopecia), dermatological conditions (such as psoriasis and vitiligo), autoimmune or systemic diseases (such as diabetes mellitus, anemia, hypo/hyperthyroidism, SLE, rheumatoid arthritis, and scleroderma), and on medications such as steroids, immunosuppressants, calcium, and Vitamin D in the past 4 weeks and on phototherapy for the past 1 month.	

Brankov et al. (2018)		
Study characteristics	• Study type: retrospective, case-control, single-center study • Study duration: 2000 to 2016 • Country: USA	
Participant characteristics	• No. of subjects: 334 LPP • Age: 54.77 ± 12.83 years • Gender: Female 311 (93.1%), male 23 (6.9%) • Ethnicity: White 221 (66.2%), African American 86 (25.7%), Other 27 (8.1%) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Cleveland Clinic Department of Dermatology, scalp biopsy was used to confirm the diagnosis of LPP	• No. of subjects: 78 controls with seborrheic dermatitis (age- and race-matched) • Age: 52.19 ± 15.37 years • Gender: Female 62 (79.5%), male 16 (20.5%) • Ethnicity: White 55 (70.5%), African American 17 (21.8%), Other 6 (7.7%) • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 167 (50.00%) • Level: N/A • Correlation: N/A	• VDD: 51 (65.40%) • Level: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: N/A	
Other	• Exclusion criteria: N/A	

Cifcia (2018)		
Study characteristics	• Study type: retrospective, case-control, single-center study • Study duration: January 2015 to December 2018 • Country: Turkey	
Participant characteristics	• No. of subjects: 155 TE • Age: 30.7 ± 9.80 years • Gender: Female 149 (96.13%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology outpatient clinics	• No. of subjects: 168 controls who visited other clinics for health checkup (age- and sex-matched) • Age: 30.76 ± 8.80 years • Gender: Female 155 (92.26%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 131 (84.52 %) • VDI: 17 (10.97 %) • Normal 5 (3.23 %) • Level: 13.42 ± 6.28 ng/ml • Correlation: N/A	• VDD: 143 (85.12 %) • VDI: 18 (10.71 %) • Normal 7 (4.17 %) • Level: 14.62 ± 6.56 ng/ml
Vitamin D measurement	• Definition: VDD: ≤ 20 ng/ml, VDI: 21-29 ng/ml • Measurement method: Gamma Counter device by using 25OH-vit D3 radioimmunoassay (RIA) kits (Beckman Coulter, Brea, CA, USA)	
Other	• Exclusion criteria: renal or hepatic diseases, thyroid diseases, rheumatological diseases, bone metabolic diseases, malabsorption, type 1 diabetes mellitus or malignancies, histology of drug use such as multivitamin, corticosteroid, and drug affecting metabolism.	

Daroach et al. (2018)		
Study characteristics	• Study type: case-control, single-center study • Study duration: N/A • Country: India	
Participant characteristics	• No. of subjects: 30 AA patients • Age: 28.97 ± 9.96 years • Gender: Female 19, male 11 • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: mean 48 weeks • Disease severity score/ grading: SALT score = 35.8±27.5 %, SALT class; S1-2 = 24 (80%), S3-4 = 3 (10%), S5 = 3 (10%) • Alopecia pattern: Patchy 22 (73.3%), other patterns AA (diffuse, alopecia totalis, ophiasis, alopecia universalis) 8 (26.7%), Involvement of other body sites 8 (26.7%) • FH of alopecia: N/A • Nail involvement: 13 (43%) • First/ recurrent episode: First episode of AA 12 (40%), more than one episode of AA 18 (60%) • Stable/ active disease: Progressive disease (appearance of new patches and increase in size of existing patches) 22 (73.3%) • Treatment information: N/A • Diagnosis and severity assessment: assessed by a blinded dermatopathologist	• No. of subjects: 30 healthy controls • Age: 31.17 ± 9.43 years • Gender: Female 14, male 16 • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 29 (96.7%) • Level: 7.65 ± 4.50 ng/ml • Correlation: SALT scores and vitamin D levels, r = -0.256, p-value = 0.17; vitamin D levels and total duration of illness r = -0.224, p = 0.03; no correlation could be demonstrated between serum vitamin D levels and site, pattern of disease, and progressive or stable disease.	• VDD: 22 (73.3%) • Level: 15.8 ± 11.47 ng/ml
Vitamin D measurement	• Definition: VDD: <20 ng/ml • Measurement method: N/A	

| Other | • Exclusion criteria: associated skin diseases like atopic dermatitis, psoriasis, autoimmune diseases (lupus erythematosus, rheumatoid arthritis, scleroderma, and thyroid disorder), patients taking oral corticosteroids in previous 2 weeks, patients applying topical Vit.D analogs or patients who have received regular Vit.D supplementation in previous 6 months, and pregnant and lactating mothers. |

Gade et al. (2018)		
Study characteristics	• Study type: case-control, single-center study • Study duration: N/A • Country: India	
Participant characteristics	• No. of subjects: 45 AA • Age: 32.73 ± 10.43 years • Gender: female 31 (68.89%) • Ethnicity: N/A • BMI: 21.55 ± 5.22 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 12 (4.0-17.0) months • Disease severity score/ grading: median SALT score (%) 4.23 (3.12–6.33) • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: JIPMER Dermatology Clinic	• No. of subjects: 45 healthy controls (age-and gender-matched) • Age: 33.98 ± 8.48 years • Gender: female 31 (68.89%) • Ethnicity: N/A • BMI: 23.42 ± 5.39 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: N/A • Level: 17.86 ± 5.83 ng/ml • Correlation: vitamin D and SALT score, ρ value = -0.714, p-value = 0.001; vtamin D and duration of symptoms, ρ value = -0.672, p-value = 0.001; vitamin D and hs-CRP, ρ value = -0.689, p value = 0.001	• VDD: N/A • Level: 30.65 ± 6.21 ng/ml
Vitamin D measurement	• Definition: N/A • Measurement method: ELISA kits, vitamin D level collected in winter	
Other	• Exclusion criteria: on any topical or systemic medication for the last 1 month before recruitment, smoking, alcoholism, obesity, pregnancy, malignancies, hepatic and renal disease, cardiovascular disease, endocrine disorders (thyroid, parathyroid or diabetes mellitus), autoimmune, infectious and infammatory diseases	

Karaguzel et al. (2018)		
Study characteristics	- Study type: case-control, single-center study - Study duration: N/A - Country: Turkey	
Participant characteristics	- No. of subjects: 30 AA - Age: 10.5 ± 2.9 years - Gender: Female 20 (66%), male 10 (34%) - Ethnicity: N/A - BMI: 17.9 ± 2.2 kg/m^2 - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: N/A - Disease severity score/ grading: N/A - Alopecia pattern: N/A - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: Pediatric endocrinology and dermatology outpatient clinic	- No. of subjects: 30 controls (age- and gender-matched) - Age: 10.5 ± 2.8 years - Gender: Female 20 (66%), male 10 (34%) - Ethnicity: N/A - BMI: 17.4 ± 2.1 kg/m^2 - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A
Vitamin D data	- VDD: 15 (50%) - Level: 25.3 ± 19.4 ng/ml - Correlation: N/A	- VDD: 16 (53%) - Level: 21.3 ± 12.5 ng/ml - Correlation: N/A
Vitamin D measurement	- Definition: VDD: < 20 ng/ml - Measurement method: high-performance liquid chromotography (HPLC with reversed phase column, IC3401rp, Thermo Seperator Products, Immuchrom GmBH, Germany).	
Other	Exclusion criteria: with any other autoimmune or chronic illness, if they were obese or had been using medication in previous six months that could alter outcome of the study	

Saniee et al. (2018)		
Study characteristics	• Study type: case-control, single-center study • Study duration: 2017 (spring and summer) • Country: Iran	
Participant characteristics	• No. of subjects: 77 AA • Age: 27.38 ± 11.94 years • Gender: Male 40 (51.9%), female 37 (48.1%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: FPT III 62 (80.5%), IV 15 (19.5%) • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: mean involved area = 43.51±20.25 • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: outpatient dermatology clinics	• No. of subjects: 112 normal controls who visited dermatology clinics (age- and sex-matched) • Age: 29.54 ± 13.65 years • Gender: Male 58 (51.8%), female 54 (48.2%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: FPT III 99 (88.4%), IV 13 (11.6 %) • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 15 (19.5%) • VDI: 47 (61%) • Normal 15 (19.5%) • Level: 20.23 ± 11.11 ng/ml • Correlation: vitamin D levels and disease severity (involved area), r = 0.008, p-value = 0.94; vitamin D levels and disease duration r = 0.022, p-value = 0.84	• VDD: 12 (10.7%) • VDI: 61 (54.5%) • Normal 39 (34.8%) • Level: 25.63 ± 15.90 ng/ml
Vitamin D measurement	• Definition: VDD: < 10 ng/ml, VDI: 10-30 ng/ml • Measurement method: commercially available radioimmunoassay (RIA) kit, samples collected during spring and summer	
Other	• Exclusion criteria: other types of alopecia, and autoimmune dermatologic diseases in control group, the use of immunosuppressive medication, zinc or vitamin D supplements or steroids, magnesium-based laxatives, diuretics or alcohol, patients with congenital or acquired errors of calcium or phosphorus metabolism, obese subjects, pregnant or lactating women, subjects with skin phototypes V, and VI, smokers, and those with chronic systematic diseases	

Sarac and Koca (2018)			
Study characteristics	• Study type: case-control, single-center study • Study duration: April 2015 to April 2016 • Country: Turkey		
Participant characteristics	• No. of subjects: 58 AGA • Age: 30.3 ± 8.8 years • Gender: Female 28 (48.28%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Dermatology clinic	• No. of subjects: 71 TE • Age: 26.6 ± 8.4 years • Gender: Female 65 (91.55%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Dermatology clinic	• No. of subjects: 58 healthy controls • Age: 28.5 ± 10.1 years • Gender: Female 47 (81.03%)) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: N/A • Level: 16.02 ± 8.3 ng/ml • Correlation: N/A	• VDD: N/A • Level: 11.6 ± 5.2 ng/ml • Correlation: N/A	• VDD: N/A • Level: 12.2 ± 8.3 ng/ml • Correlation: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: N/A		
Other	• Exclusion criteria: patients with abnormal complete blood count, thyroid function test, vitamin B 12, folic acid, ferritin and zinc levels		

Unal and Gonulalan (2018)		
Study characteristics	• Study type: case-control, single-center study • Study duration: November 2015 to March 2016 • Country: Turkey	
Participant characteristics	• No. of subjects: 20 pediatric AA • Age: 12.67 ± 4.16 years (calculated) • Gender: female 6 (30%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: all participants were white-skinned and from same region, Konya, Turkey • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 8.85±4.63 months • Disease severity score/grading: SALT class; S1 = 6 (30%), S2 = 9 (45%), S3 = 5 (25%), S4 = 0, S5 = 0, mean SALT score 35.78 (calculated) • Alopecia pattern: 2 (10%) two patches; 4 (20%) four patches; 2 (10%) five patches; 5 (25%) six patches; 3 (15%) seven patches; 1 (5%) eight patches; 3 (15%) nine patches. • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology clinic	• No. of subjects: 34 pediatric healthy controls • Age: 16.54 ± 0.91 years (calculated) • Gender: female 19 (55.88%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: N/A • Level: 15.47 ± 7.66 ng/ml • Correlation: vitamin D level and SALT score: $r = -0.831$, $p=0.000$; vitamin D level and number of patches: $r = -0.989$, $p=0.000$; vitamin D level and disease duration: $r = -0.997$, $p=0.000$	• VDD: N/A • Level: 11.09 ± 10.53 ng/ml
Vitamin D measurement	• VDD: was defined as ≤ 20 ng/ml • Measurement method: N/A	

Other	• Exclusion criteria: Patients with any dermatological disease except AA or systemic disease, history of sunscreen uses and smokers, Patients with a history of any topical or systemic treatment (dermatologic or nondermatologic) within 4 weeks, and patients receiving phototherapy within 6 months and BMI: >25 kg/m^2

Bhat et al. (2017)		
Study characteristics	• Study type: cross-sectional case-control, single-center study • Study duration: May to October 2015 • Country: India	
Participant characteristics	• No. of subjects: 50 AA • Age: 22.4 ± 8.6 years • Gender: N/A • Ethnicity: N/A • BMI: 20.96±1.91 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration 4.8 ± 4.58 months • Disease severity score/grading: SALT class; S1 = 38, S2 = 12, mean SALT score 18.38 (calculated) • Alopecia pattern: single patch 29 (58%), multiple patch 21 (42%) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: clinically and trichoscopically diagnosed AA	• No. of subjects: 35 healthy controls randomly from our OPD with no history of AA (age- and sex-matched) • Age: 29.2 ± 7.6 years • Gender: N/A • Ethnicity: N/A • BMI: 21.37 ± 1.70 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: N/A • Level: 16.6 ± 5.9 ng/ml • Correlation: vitamin D levels and SALT score, r = -0.730, p-value < 0.001; vitamin D levels and number of patches, r=-0.670, p-value < 0.001	• VDD: N/A • Level: 40.5 ± 5.7 ng/ml or 25.49 ± 1.02 ng/ml *
Vitamin D measurement	• Measurement method: Chemiluminescence method/kit method (Siemens USA) as per manufacturers protocol, using Siemens ADVIA Centaur Analyzer	
Other	• Exclusion criteria: Patients suffering from any other dermatological condition or any systemic or autoimmune illness; Other causes of alopecia including scarring alopecia, androgenic alopecia, telogen effluvium, and female pattern hair loss; Patients who had received oral or topical medications during the past 4 weeks (topical, intralesional, or oral steroids, immunosuppressants, Vitamin D supplements, and topical vitamin D analogs); Pregnant and lactating females; Patients with body mass index (BMI:) more than 25	

	- * conflicting results between abstract and maintext, and so mean difference of vitamin D level from this study was not used

Conic et al. (2017)		
Study characteristics	• Study type: retrospective, case-control, single-center study (Cleveland Clinic Alopecia registry) • Study duration: 2005 to 2014 • Country: USA	
Participant characteristics	• No. of subjects: 584 AA • Age: 35.54 ± 19.28 years • Gender: Female 400 (68.50%), male 184 (31.50%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/grading: N/A • Alopecia pattern: AA 553 (94.7%), AT 12 (2.05%) AU 19 (3.25%) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: diagnosis of AA by a Cleveland Clinic dermatologist	• No. of subjects: 172 controls with seborrheic dermatitis (age-matched) • Age: 35.80 ± 15.56 years • Gender: Female 126 (73.25%), male 46 (26.75%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 228 (39.00%) • Level: N/A • Correlation: N/A	• VDD: 22 (12.79%) • Level: N/A
Vitamin D measurement	• Definition: N/A • Measurement method: N/A	
Other	• Selection criteria: the criteria for inclusion were diagnosis of AA by a Cleveland Clinic dermatologist and presence of a current comorbidities list in the patient's medical record; absence of hair loss in control group was assessed by hair loss specialists to ensure validity	

Erpolat et al. (2017)		
Study characteristics	- Study type: case-control, single-center study - Study duration: October 2010 to March 2011 (during fall and winter) - Country: Turkey	
Participant characteristics	- No. of subjects: 41 AA - Age: 32.8 ± 7.5 years - Gender: Female 15 (36.59%) - Ethnicity: N/A - BMI: N/A - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: FPT II 8 (19.5%), III 21 (51.2%), IV 12 (29.3%) - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration (months): < 1 =13 (31.7%), 1–3 =10 (24.4%), 4–6 =5 (12.2%), > 6 =13 (31.7%) - Disease severity score/grading: N/A - Alopecia pattern: Single patch 15 (36.6%), multiple patches 26 (63.4%) - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: department of dermatology	- No. of subjects: 32 healthy controls - Age: 32.7 ± 7.5 years - Gender: Female 14 (43.75%) - Ethnicity: N/A - BMI: N/A - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: FPT II 4 (12.5%), III 20 (62.5%), IV 8 (25.0%) - Diet: N/A - Sun-exposure/ sunscreen usage: N/A
Vitamin D data	- VDD: 35 (85.3%) - VDI: 4 (9.8%) - Normal 2 (4.9%) - Level: 8.1 ng/ml (ranged from 5.0 to 38.6 ng/ml) ➔ 8.1 ± 8.4 ng/ml - Correlation: No correlation between between serum vitamin D level and severity of disease	- VDD: 30 (93.8%) - VDI: 1 (3.1%) - Normal 1 (3.1%) - Level: 9.8 ng/ml (range 3.6 to 38.5 ng/ml) ➔ 9.8 ± 8.73 ng/ml
Vitamin D measurement	- Definition: VDD: <20 ng/ml, VDI: 20-30 ng/ml, normal > 30 ng/ml - Measurement method: high performance liquid chromatography (HPLC) (Vertical Mark of Column device by UFLC-SHIMADZU, with features by Verti SepTM GES C18HPLC Column, ImmuChrom GmbH lot number VD-130218F)	
Other	Exclusion criteria: oral vitamin D supplementation, major cardiovascular disease, liver disease, kidney or digestive disease, treatment for AA 1 month before test-ing or refusal to have laboratory testing	

Ghafoor and Anwar (2017)		
Study characteristics	• Study type: case-control, single-center study • Study duration: October 2014 to March 2015 • Country: Pakistan	
Participant characteristics	• No. of subjects: 30 AA • Age: 23.77 ± 8.86 years • Gender: Male 12 (40%), female 18 (60%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/grading: SALT class; S1 = 4 (13.33%), S2 = 7 (23.33%), S3 = 12 (40%), S4 = 1 (3.33%), S5 = 6 (20%), mean SALT score 57.8 (calculated) • Alopecia pattern: Unifocal 6 (20%), multifocal 15 (50%), ophiasis 3 (0.9%), AU 2 (6.67%), AT 4 (13.33%) • FH of alopecia: N/A • Nail involvement: 10 (33.3%) • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: a trained dermatologist	• No. of subjects: 30 controls (age- and gender-matched) • Age: 24.03 ± 8.62 years • Gender: Male 12 (40%), female 18 (60%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: N/A • Level: median 13.5 (IQR 18.6) ng/ml ➔ 13.50 ± 13.79 ng/ml • Correlation: N/A	• VDD: N/A • Level: median 22.5 (IQR 16.25) ng/ml ➔ 22.50 ± 12.05 ng/ml
Vitamin D measurement	• Definition: N/A • Measurement method: Enzyme immunoassay method on chemical analyser by Hitachi (Roshe).	
Other	• Exclusion criteria: patients who have taken systemicsteroids, calcium and vitamin D supplementations, bisphosphonates, immunosuppressive agents, received phototherapy during last 1 year, pregnant and lactating women, have autoimmune disorders, sarcoidosis renal disease, malignancy and malabsorption	

Gurel et al. (2017)		
Study characteristics	• Study type: prospective, case-control, single-center study • Study duration: October 2016 – December 2016 • Country: Turkey	
Participant characteristics	• No. of subjects: 80 CTE • Age: 26.41 ± 6.93 years • Gender: Female 80 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology outpatient clinic	• No. of subjects: 80 controls (age- and gender-matched) • Age: 25.79 ± 7.41 years • Gender: Female 80 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: N/A • Level: median 6.65 (IQR 3.30-27.30) ng/ml ➜ 12.42 ± 17.79 ng/ml • Correlation: N/A	• VDD: N/A • Level: median 18.70 (IQR 4.50-59.60) ng/mL ➜ 27.6 ± 40.85 ng/ml
Vitamin D measurement	• Definition: N/A • Measurement method: Architect ci8200 Immunassay system.	
Other	• Selection criteria: hair loss for more than 6 months, had no clinically significant hair loss in a certain region, no thinning or thinning in the central scalp region, and no signs of scar or atrophy; exclusion criteria: age<18, >45, male, drug that may cause hair loss (anticoagulant, retinoid, anticonvulsant, antidepressant, vitamin and iron supplement, pregnant, lactating • Median and IQR of vitamin D levels were converted to mean and SD	

Narang et al. (2017)	
Study characteristics	- Study type: prospective, cross-sectional single-center study - Study duration: N/A - Country: India
Participant characteristics	- No. of subjects: 22 AA (limited, < 40% involvement) - Age: 30.4 ± 10.8 years - Gender: Female 10 (45.5%), male 12 (54.5%) - Ethnicity: N/A - BMI: N/A - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: median 42 weeks - Disease severity score/grading: SALT score ranged from 8.4 to 40 - Alopecia pattern: N/A - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: N/A
Vitamin D data	- VDD: 20 (91%) - Level: N/A - Correlation: N/A
Vitamin D measurement	- Definition: VDD: <20 ng/dL (assume ng/ml) - Measurement method: N/A
Other	Exclusion criteria: patients on systemic vitamin D supplementation, alopecia totalis or alopecia universalis, pregnant and lactating females, and patients with other comorbidities like atopic dermatitis

Attawa et al. (2016)		
Study characteristics	- Study type: case-control, single-center study - Study duration: April 2014 to November 2014 - Country: Egypt	
Participant characteristics	- No. of subjects: 23 AA - Age: 26.44 ± 10.87 years - Gender: Female 8 (34.8%), male 15 (65.2%) - Ethnicity: N/A - BMI: N/A - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A - Disease duration: 9.35 ± 16.88 years - Disease severity score/grading: SALT class; S1 = 14 (61%), S2 = 3 (13%), S3+S4+S5 = 6 (26%), mean SALT score 34.04 (calculated) - Alopecia pattern: Single patch 9 (39.2%), multiple patches 11 (47.8%), AT 2 (8.7%), AU 1 (4.3%) - FH of alopecia: N/A - Nail involvement: N/A - First/ recurrent episode: N/A - Stable/ active disease: N/A - Treatment information: N/A - Diagnosis and severity assessment: Dermatology, Venereology & Andrology Department and Clinical Pathology Department, Faculty of medicine, Zagazig University	- No. of subjects: 23 healthy controls - Age: 29.39 ± 8.10 years - Gender: Female 9 (39.1%), male 14 (60.9%) - Ethnicity: N/A - BMI: N/A - Comorbidity: N/A - Smoking: N/A - Alcohol: N/A - Skin type: N/A - Diet: N/A - Sun-exposure/ sunscreen usage: N/A
Vitamin D data	- VDD: 5 (21.7%) - VDI: 16 (69.6%) - Normal 2 (8.7%) - Level: 14.13 ± 8.72 ng/ml - Correlation: N/A	- VDD: 3 (13%) - VDI: 9 (39.1%) - Normal 11 (47.8%) - Level: 22.43 ± 10.94 ng/ml
Vitamin D measurement	- Definition: VDD: < 10 ng/ml, VDI: 10-30 ng/ml, normal >30 ng/ml - Measurement method: ELISA technique	
Other	Exclusion criteria: patients currently taking nutritional supplement, pregnancy, drug usage and other associated diseases that could alter the level of vitamin D were excluded from the study, also patients and controls with systemic diseases affecting the hair, autoimmune diseases, or history of atopy.	

Bakry et al. (2016)		
Study characteristics	• Study type: case-control, single-center study • Study duration: October 2013 to March 2014 • Country: Egypt	
Participant characteristics	• No. of subjects: 60 AA • Age: 20.7 ± 10.85 years • Gender: Male 36 (60%), female 24 (40%) • Ethnicity: N/A • BMI: 20.56 ± 4.28 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: FPT III 26 (43.3%), IV 34 (56.7%) • Diet: N/A • Sun-exposure / sunscreen usage: N/A • Disease duration: 2.36 ± 2.85 months • Disease severity score/grading: N/A • Alopecia pattern: patchy 32 (53.3%), ophiasis 12 (20%), AT/AU 16 (26.7%) • FH of alopecia: N/A • Nail involvement: 12 (20.0%) • First/ recurrent episode: recurrent 10 (16.7%), nonrecurrent 50 (83.3) • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 60 controls (age-, gender-, FPT-, and BMI-matched) • Age: 23.71 ± 7.45 years • Gender: Male 28 (46.7%), female 32 (53.3%) • Ethnicity: N/A • BMI: 20.6 ± 2.98 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: FPT III 24 (40%), IV 36 (60%) • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 50 (83.3%) • Normal 10 (16.7%) • Level: 44.04 ± 15.61 nmol/l ➔ 17.62 ± 6.24 ng/ml • Correlation: Severe AA showed significantly the lowest vitamin D levels compared with cases with mild (P = 0.002) and moderate disease (P = 0.03); A significant inverse correlation was found between 25-hydroxyvitamin D levels and age of the patients (r = −0.38; P = 0.03).; No significant association between vitamin D levels and gender, disease duration, disease recurrence, nail affection, duration of sun exposure/ day, or positive family history of AA.	• VDD: 14 (23.3%) • Normal 46 (76.7%) • Level: 66.07 ± 17.40 nmol/l ➔ 26.43 ± 6.96 ng/ml
Vitamin D measurement	• Definition: VDD: <50 nmol/L, VDI: 50–75 nmol/l, Normal >75 nmol/L	

	• Measurement method: Commercial Enzyme-Linked Immunosorbent Assay (ELISA) kits (Immunodiagnostic Systems Limited, Bolden, UK).
Other	• Exclusion criteria: patients with a history of topical or systemic treatment (corticosteroids, intralesional steroid injection,immunosuppressive therapy, vitamin D or calcium supplementation, bisphosphonates, hepatic enzyme inducers, anticonvulsants and anticancer medications, and cholesterol lowering drugs) within 4 weeks of the study, patients receiving phototherapy within 6 months of the study, patients with a history of diabetes mellitus, anemia, thyroid disorders, chronic liver or renal diseases, atopy, parathyroid disorders, patients with known autoimmune diseases or cancer, patients with congenital or acquired errors of calcium or phosphorus metabolism, subjects with inadequate sun exposure and obese subjects, pregnant or lactating women, subjects with skin phototypes V, and VI, and smokers • Typo in manuscript, so we assume nmol/L instead of nmol/mL

Banihashemi et al. (2016)		
Study characteristics	• Study type: case-control, single-center study • Study duration: N/A (Autumn) • Country: Iran	
Participant characteristics	• No. of subjects: 45 FPHL • Age: 29.11 ± 7.31 years • Gender: Female 45 (100 %) • Ethnicity: N/A • BMI: 22.94 ± 3.27 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 2 years (IQR 1-5) • Disease severity score/grading: Ludwig classification (by a questionnaire developed for the study) Grade I 28 (66.7%), Grade II 12 (28.6%), Grade III 2 (4.8%) • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: N/A	• No. of subjects: 45 healthy controls (age-, gender-, hours spent under sunlight per day-, and BMI-matched) • Age: 28.82 ± 7.11 years • Gender: Female 45 (100 %) • Ethnicity: N/A • BMI: 22.78 ± 3.07 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 36 (80%) • VDI: 5 (11.1%) • Normal 4 (8.9%) • Level: 13.45 ± 8.40 ng/ml • Correlation: No significant correlation between serum levels of Vitamin D3 and age (r = 0.08, P = 0.61), BMI (r = −0.06, P = 0.69), and FPHL duration (r = 0.04, P = 0.77).; No significant relation between serum Vitamin D3 level and family history of FPHL, menstrual disorder, hirsutism, Ludwig score of alopecia severity, and skin type of the patients.	• VDD: 32 (71.1%) • VDI: 6 (13.3%) • Normal 7 (15.6%) • Level: 17.16 ± 8.96 ng/ml
Vitamin D measurement	• Definition: VDD: <20 ng/ml, VDI: 20-30 ng/ml, normal > 30 ng/ml • Measurement method: ELISA method	

Other	• Exclusion criteria: topical treatment with vitamin D3 compounds or systemic therapy(phototherapy) within the past month, use of vitamin D3 supplements, and other chronic inflammatory diseases such as multiple sclerosis, inflammatory bowel diseases, rheumatoid arthritis, insulin-dependent diabetes mellitus, systemic lupus erythematosus, lymphoma, nonmelanoma skin cancer, or any history of cancer

Cheung et al. (2016)	
Study characteristics	• Study type: retrospective, cross-sectional descriptive, single-center study • Study duration: June 2012 to December 2014 • Country: USA
Participant characteristics	• No. of subjects: 413 acute and chronic TE (115 with lab results) • Age: range 16 to 89 • Gender: Female 110, male 5 • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: a dermatologist
Vitamin D data	• VDD: 39 (33.9%) • Level: N/A • Correlation: N/A
Vitamin D measurement	• Definition: VDD: < 30 nmol/L (12 ng/ml) • Measurement method: N/A
Other	• Exclusion criteria: N/A

Darwish et al. (2016)		
Study characteristics	• Study type: prospective, case-control, single-center study • Study duration: April 2014 to November 2014 • Country: Egypt	
Participant characteristics	• No. of subjects: 30 AA • Age: 28.67 ± 10 years • Gender: Male 13 (43.3%), female 17 (56.7%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: <6 months 15 (50%), >6 months 15 (50%) • Disease severity score/grading: SALT score: S1= 10 (33.3%), S2= 7 (23.3%), S3= 4 (13.3%), S4= 3 (10%), S5= 1 (3.3%), S4 B= 3 (10%), S5 B= 2 (6.7), mean SALT score 39.64% (calculated) • Alopecia pattern: Patchy AA 20 (66.7%), AT&AU 10 (33.3%) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: outpatient clinic of Dermatology, Andrology and STDs department in Mansoura University Hospital.	• No. of subjects: 20 healthy controls (age- and sex-matched) • Age: 24.8 ± 6 years • Gender: Male 10 (50%), female 10 (50%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: N/A • Level: 7.52 ± 6.24 ng/ml • Correlation: No significant correlation was found between SALT score and vitamin D.	• VDD: N/A • Level: 31.70 ± 12.29 ng/ml
Vitamin D measurement	• Definition: N/A • Measurement method: ELISA kits (SunRedbio, Shanghai).	
Other	• Exclusion criteria: any patient taking vitamin D supplementation, iron preparations, vitamin B, folic acid or calcium (Ca) supplementations in the last 6 months, patients treated with topical vitamin D3 analog, patients known to have a state of vitamin D deficiency (to avoid the selection bias), patients with any associated disease that alter the blood 25(OH)D level as vitiligo, psoriasis, SLE, renal disease, liver disease, cancers and autoimmune diseases.	

Fattah and Darwish (2015)		
Study characteristics	• Study type: case-control, single-center study • Study duration: June 2011 to August 2012 (summer) • Country: Egypt	
Participant characteristics	• No. of subjects: 30 AA (recalcitrant and/or extensive – AU, AT, multiple patches of AA, >50% scalp involvement) • Age: 26.8 ± 6.9 years • Gender: Male 18 (60 %), female 12 (40 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: FPT III 19, IV 11 • Diet: N/A • Sun-exposure/ sunscreen usage: 18 male and 2 female had outdoor occupation • Disease duration: 4 ± 1.5 years • Disease severity score/grading: SALT class; S3 = 15 (50 %), S4 = 3 (10 %), S5 =12 (40 %), B0 = 27 (90%), B2 = 3 (10%), mean SALT score 79.45% (calculated) • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Outpatient Dermatology Clinic	• No. of subjects: 30 healthy controls (age-, sex-, FPT-, approximate daily amount of vitamin D intake-, occupation (indoor or outdoor)- , and time of blood sampling- matched) • Age: 25.1 ± 6.9 years • Gender: Male 18 (60 %), female 12 (40 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 28 (93.3%) • VDI: 2 (6.67%) • Normal 0 (0%) • Level: 18.4 ± 3.39 ng/ml • Correlation: vitamin D level (before treatment) and SALT score: r = -0.895, p-value = 0.001; vitamin D level (after treatment) and SALT score: r = - 0.7202, p-value = 0.001; vitamin D level (before treatment) and disease duration: r = -0.085, p=0.655	• VDD: 0 (0%) • VDI: 3 (10%) • Normal 27 (90%) • Level: 45.2 ± 20.5 ng/ml
Vitamin D measurement	• Definition: VDD: ≤ 20 ng/ml; VDI: >20 to <30 ng/ml, normal ≥ 30 ng/ml	

	• Measurement method: enzyme-linked immunosorbent assay technique (EIA-5396; DRG International Inc., Springfield, New Jersey, USA).
Other	• Exclusion criteria: pregnancy, lactation, smoking, obesity, malabsorption disorders, kidney or liver diseases or the use of any drug including vitamin D or calcium supplements, weight loss drugs, cholesterol-lowering drugs, systemic steroids, hepatic enzyme inducers, and thiazide diuretics, patients applying sunscreen or receiving phototherapy or photochemotherapy in the last 6 months and patients with contraindications to PUVA or NB-UVB, such as patients having any photosensitive condition or with a predisposition to or actually having cutaneous malignancies.

Ogrum et al. (2015)		
Study characteristics	• Study type: case-control, single-center study • Study duration: March to May 2011 • Country: Turkey	
Participant characteristics	• No. of subjects: 40 AA • Age: 31.23 ± 7.34 years • Gender: Female 21 (52.5%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: FPT I-III 6 (15%), IV-VI 34 (85%) • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/grading: SALT class; S1 = 35 (87.5%), S2 = 3 (7.5%), S3 = 2 (5%), mean SALT score 16.79 (calculated) • Alopecia pattern: patchy 37 (92.5%), ophiasis 2 (5%), reticularis 1 (2.5%) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: recurrent 16 (40%), acute 24 (60%) • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology outpatient clinic	• No. of subjects: 40 controls (age-, gender- and skin phenotype- matched) • Age: 30.58 ± 7.19 years • Gender: Female 21 (52.5%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: FPT I-III 6 (15%), IV-VI 34 (85%) • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 33 (82.5%) • VDI: 6 (15%) • Normal 1(2.5%) • Level: N/A • Correlation: N/A	• VDD: 29 (72.5%) • VDI: 10 (25%) • Normal 1 (2.5%) • Level: N/A
Vitamin D measurement	• Definitions: VDD: < 15 ng/ml, VDI: 15-30 ng/ml, Normal > 30 ng/ml • Measurement method: radioimmunoassay method	
Other	• Exclusion criteria: systemic steroids usage in the last 3 months, vitamin D or calcium supplements, kidney or liver disease, not in the age group of 20-50, menopausal	

Cerman et al. (2014)		
Study characteristics	• Study type: cross-sectional case-control, single-center study • Study duration: November 21, 2012 to March 21, 2013 • Country: Turkey	
Participant characteristics	• No. of subjects: 86 AA • Age: 32.21 ± 9.60 years • Gender: Female 30 (42%) • Ethnicity: N/A • BMI: 22.2 ± 2.0 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 11.74 ± 29.85 months • Disease severity score/grading: SALT (%) 14.41 ± 9.92, SALT class; S1 = 41 (83%), S2 = 15 (17%) • Alopecia pattern: 51 (59.3%) multiple patches, 35 (40.7%) single patch • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: old 50 (58%), new 36 (42%) • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Dermatology Depart ment	• No. of subjects: 58 healthy controls (age- and sex-matched) • Age: 32.55 ±9 .78 years • Gender: Female 24 (41.38%) • Ethnicity: N/A • BMI: 22.3 ± 1.6 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 78 (90.7%) • Level: 11.84 ± 6.18 ng/ml • Correlation: vitamin D level and SALT scores, r = -0.409, p-value < 0.001	• VDD: 19 (32.8%) • Level: 23.57 ± 9.03 ng/ml
Vitamin D measurement	• Definition: VDD: ≤ 20 ng/mL • Measurement method: liquid chromatography/tandem mass spectrometry (Quattro Premier XE; Waters, Milford, MA, U.S.A.)	
Other	• Exclusion criteria: patients with a history of topical or systemic treatment (corticosteroids, intralesional steroid injection, immunosuppressive therapy, vitamin D or calcium supplementation, bisphosphonates, hepatic enzyme inducers and cholesterol-lowering drugs) within 4 weeks of the study; patients receiving phototherapy within 6 months of the study; patients with a history of DM, anaemia, thyroid disorders, autoimmune diseases (including SLE, RA, psoriasis, MS and IBD) and atopy (including atopic dermatitis and asthma), and patients with both vitiligo and AA, parathyroid disorders, chronic renal or liver disease or malignancy; pregnant or lactating women, smokers and patients applying sunscreen; all participants with a body mass index > 25 kg/m^2	

Mahamid et al. (2014)		
Study characteristics	• Study type: prospective, case-control, single-center study • Study duration: March 2010 to May 2011 (winter and summer) • Country: Israel	
Participant characteristics	• No. of subjects: 23 AA • Age: 24.2 ± 12.3 years • Gender: female 9 (39.13%) • Ethnicity: N/A • Disease duration 1.3 ± 1.4 years • BMI: 22.3 ± 4.7 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/grading: N/A • Alopecia pattern: Patchy 18, extensive 5 (21.74 %) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: two senior dermatologists according to the clinical evaluation. If the diagnosis was not clear after clinical evaluation, a skin biopsy was performed to confirm the diagnosis	• No. of subjects: 20 controls without a history of AA who were enrolled randomly from the clinics (age- and gender-matched) • Age: 27 ± 11.26 years • Gender: female 7 (35%) • Ethnicity: N/A • BMI: 23.1 ± 3.2 kg/m^2 • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 16 (69.5%) • Level: 11.32 ± 10.18 ng/ml • Correlation: N/A	• VDD: 5 (25%) • Level: 21.55 ± 13.62 ng/ml
Vitamin D measurement	• Definition: VDD < 20 ng/ml, VDI < 30 ng/ml • Measurement method: Commercial enzyme immunoassay, measured in the winter and summer seasons due to previous data that showed a seasonal variability	
Other	• Exclusion criteria: patients with other skin disorders and/or another cause of alopecia (tinea capitis, trichotillomania, androgenic alopecia, scarring alopecia, traction alopecia, secondary syphilis, telogeneffluvium, female androgenic alopecia), as well as patients with autoimmune or systemic diseases (SLE, rheumatic arthritis, scleroderma, thyroiditis, hyperthyroidism, hypothyroidism)	

Moneib et al. (2014)		
Study characteristics	• Study type: case-control, single-center study • Study duration: February to May • Country: Egypt	
Participant characteristics	• No. of subjects: 60 FPHL • Age: 28.67 ± 10 years • Gender: Female 60 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 3.63 ± 2.59 years (calculated) • Disease severity score/grading: Ludwig classification degree I 34 (56.67%), degree II 22 (36.67%), degree III 4 (6.67%) • Alopecia pattern: N/A • FH of alopecia: 37 (61.67%) no family history, 23 (38.33%) with family history • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology outpatient clinic, Ain Shams University Hospital.	• No. of subjects: 60 controls (age-, gender-, skin type-, socioeconomic status-, outdoor exposure-matched) • Age: 24.8 ± 6 years • Gender: Female 60 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 47 (78.3%) • VDI: 11 (18.3%) • Normal 2 (3.3%) • Level: 14.2 ± 7.31 ng/ml • Correlation: N/A	• VDD: 9 (15%) • VDI: 0 (0%) • Normal 51 (85.0%) • Level: 45.90 ± 18.83 ng/ml
Vitamin D measurement	• Definition: VDD: <20 ng/ml, VDI: 21–29 ng/ml, normal >30 ng/ml • Measurement method: radioimmunoassay technique	
Other	• Exclusion criteria: participants suffering from other scalp hair disorders whether primary (e.g. TE, alopecia areata, trichotillomania, tinea capitis, and traction alopecia) or secondary (e.g. seborrheic dermatitis, psoriasis), participants with hyperandrogenemia, showing clinically (e.g. hirsutism, menstrual irregularities, and polycystic ovary) or by laboratory investigations (e.g. elevated free testosterone, elevated serum dehydroepiandrosterone sulfate), participants taking any drugs that could alter serum vitamin D levels	

| | | (e.g. systemic corticosteroids, contraceptives, antiepileptic drugs, weight loss drugs, and cholesterol-lowering drugs), and participants suffering from malabsorption disorders, nutritional deficiencies, or kidney, liver, or bone diseases. |

D'Ovidio et al. (2013)		
Study characteristics	• Study type: case-control, single-center study • Study duration: October to March of 2010 to 2012 (autumn/winter) • Country: Italy	
Participant characteristics	• No. of subjects: 156 AA (>25% scalp area) • Age: mean 37.8 years • Gender: Female 111, male 45 • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 49 (6-20) months • Disease severity score/grading: N/A • Alopecia pattern: AA multilocularis 49 (31.5%), Ophiasis 69 (44%), AT/AU 38 (24.5%) • FH of alopecia: 42% with family history • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: 57% active, 43% in stationary/remission phase • Treatment information: N/A • Diagnosis and severity assessment: disease activity evaluated by perilesional trichogram	• No. of subjects: 148 unmatched healthy controls • Age: mean 34.5 years • Gender: Female 130, Male 18 • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 42.4% • Level: N/A • Correlation: decreased level of 25OHD was not correlated with pattern or extent of hair loss.	• VDD: 29.5% • Level: N/A
Vitamin D measurement	• Definition: VDD: < 20 ng/ml • Measurement method: chemilumiscence assay of plasmatic 25(OH)D, autumn/winter periods	
Other	• Exclusion criteria: N/A	

El-Mongy et al. (2013)		
Study characteristics	• Study type: case-control, single-center study • Study duration: January 1, 2011 to June 30, 2011 • Country: Egypt	
Participant characteristics	• No. of subjects: 70 AA • Age: 27.79 ± 9.12 years • Gender: female 33 (47.1%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: 29.63 ± 43.43 months • Disease severity score/grading: SALT class; S1 = 30 (42.9%), S2 = 12 (17.1%), S3 + S4 + S5 = 28 (40.0%), mean SALT score 44.83 (calculated) • Alopecia pattern: patchy 49 (70.0%), AT/AU 21 (30.0%) • FH of alopecia: positive 6 (8.6%), negative 64 (91.4%) • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Outpatient Clinic of Dermatology	• No. of subjects: 70 healthy controls • Age: 30.49 ± 11.06 years • Gender: female 26 (37.1%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 6 (8.6%) • VDI: 44 (62.9%) • Normal 20 (28.6%) • Level: 66.4 ± 32.6 nmol/l ➔ 26.56 ± 13.04 ng/ml • Correlation: no positive correlation between serum 25-OH Vit D levels and duration of disease (p-value = 0.674), type (p-value = 0.140), severity of AA (p-value = 0.176) or family history (p-value = 0.589)	• VDD: 5 (7.1%) • VDI: 31 (44.3%) • Normal 34 (48.6%) • Level: 84.2 ± 55.9 nmol/l ➔ 33.68 ± 22.36 ng/ml
Vitamin D measurement	• Definition: VDD: <30 nmol/l (12 ng/ml), VDI: 30-75 nmol/l (12-30 ng/ml), normal >75 nmol/l (>30 ng/ml) • Measurement method: A direct enzyme-linked immunosorbent assay with the 25-Hydroxy Vitamin D Direct EIA kit purchased from Immunodiagnostic Systems Ltd (Stubenwald-Allee, Bensheim, Germany).	

Other	• Exclusion criteria: any patient known to have a state of vitamin D deficiency or a disease that could affect its level (e.g. renal diseases, cancers, Systemic Lupus Erythematosus or psoriasis) and those who were experiencing spontaneous regrowth of terminal hair at the time of presentation. Furthermore, any patient who was taking vitamin D supplementation, oral or topical, for the last 2 months or receiving PUVA treatment was excluded.

Nassiri et al. (2013)		
Study characteristics	• Study type: case-control, single-center study • Study duration: September 2010 to March 2012 • Country: Iran	
Participant characteristics	• No. of subjects: 28 AA • Age: 27.75 ± 7.97 years • Gender: Female 9 (32.14%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: median 6 (0.5-20) years • Disease severity score/grading: SALT (%); 0-24 = 6 (21.4%), 25-49 = 4 (14.3%), 50-74 = 1 (3.6%), and 100 = 17 (60.7%), mean SALT score 70.79 (calculated) • Alopecia pattern: patchy 10 (35.7 %), AT 8 (28.6 %), AU 9 (32.1%), and ophiasis 1 (3.6%). • FH of alopecia: positive 1 (3.57%) • Nail involvement: 10 (35.71%) • First/ recurrent episode: N/A • Stable/ active disease: 14 (50.00%) • Treatment information: N/A • Diagnosis and severity assessment: Diagnosis of AA of the scalp was made by a dermatologist	• No. of subjects: 44 healthy controls • Age 33.16 ± 12.52 years • Gender: Female 28 (63.63%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 9 (31.1%) • VDI: 14 (50.0%) • Normal 5 (17.9%) • Level: N/A • Correlation: N/A	• VDD: 23 (52.3%) • VDI: 20 (45.4%) • Normal 1 (2.3%) • Level: N/A
Vitamin D measurement	• Definition: VDD: <10 ng/ml, VDI: 10 to <30 ng/ml, normal >30ng/ml • Measurement method: LIAISON kits (Diasorin LIAISON, Stillwater, Mn, USA) and via automated chemiluminescence immunoassay (CLIA)	
Other	• Exclusion criteria: taking vitamin D or calcium supplements, frequent ingestion of alcohol, gastrointestinal problems, bone or renal disease, sarcoidosis, or any othermetabolic and systemic disorder that could affect 25(OH)D3 absorption, metabolism, or serum	

| | | level, treatment by systemic or topical steroids, barbiturates, bisphosphonates, sulfasalazine, or receiving PUVA or NBUVB during the previous three months. |

Rasheed et al. (2013)			
Study characteristics	• Study type: case-control, single-center study • Study duration: July 2011 to October 2011 • Country: Egypt		
Participant characteristics	• No. of subjects: 42 CTE • Age: range 18 to 45 years • Gender: Female 42 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/ grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: Dermatology Outpatients Clinic	• No. of subjects: 38 FPHL • Age: range 18 to 45 years • Gender: Female 38 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A	• No. of subjects: 40 healthy female controls (age- and SPT- matched) • Age: 30.8 ± 8.56 years • Gender: Female 40 (100 %) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 10 (23.8 %) • VDI: 32 (76.2 %) • Level: 23.9 ± 38.5 nmol/l ➔ 9.56 ± 15.4 ng/ml • Correlation: N/A	• VDD: 13 (34.2 %) • VDI: 25 (65.8 %) • Level: 29.1 ± 8.5 nmol/l ➔ 11.64 ± 3.4 ng/ml • Correlation: N/A	• VDD: 2 (5 %) • VDI: 9 (22.5 %) • Normal 29 (72.5%) • Level: 118.2 ± 68.1 nmol/l ➔ 47.28 ± 27.24 ng/ml
Vitamin D measurement	• Definition: VDD: <25 nmol/l (10 ng/ml) and VDI: 25–75 nmol/l (10-30 ng/ml) • Measurement method: competitive enzyme immunoassay		
Other	• Exclusion criteria: patients with less than 5 diagnostic criteria in one diagnosis to avoid overlap cases and the presence of any systemic and/or scalp disease that might be related to hair loss; subjects on medication that could be related to hair loss (e.g., anticoagulants, retinoids, anticonvulsants and antide-pressants); subjects receiving drugs containing vitamin D, iron or dietary		

	supplements; recent stressful events (i.e. within the last 6 months) like physiological stress, surgical trauma, high fever, chronic systemic illness, hemorrhage, emotional stress, pregnancy or the presence of an elevated level of CRP ($\geq$4); menopausal subjects.

Yilmaz et al. (2012)		
Study characteristics	• Study type: case-control, single-center study • Study duration: June 2010 to September 2010 • Country: Turkey	
Participant characteristics	• No. of subjects: 42 AA • Age: 31.1 ± 8.2 years • Gender: Female 28 (66.67%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/grading: SALT class; S1 = 30 (71.4%), S2 = 6 (14.2%), S3 = 3 (7.4%), S4 = 2 (4.7%), S5 = 1 (2.3%), mean SALT score 25.13 (calculated) • Alopecia pattern: patchy 34 (80.9%), ophiasis 6 (14.2%), totalis 2 (4.7%) • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: Old onset 11 (26.1 %), new 31 (73.8 %) • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatology clinic	• No. of subjects: 42 healthy controls • Age: 29.3 ± 7.4 years • Gender: Female 29 (69.05%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: 36 (85%) • Level: 33.4 ± 17.7 nmol/L ➜ 13.4 ± 7.1 ng/ml • Correlation: no correlation was found between the concentrations of 25(OH)-D, 1,25(OH)2D3 and various clinical parameters including extent of the hair loss patch, disease duration, number of patches and nail involvement.	• VDD: N/A • Level: 51.2 ± 21.1 nmol ➜ 20.5 ± 8.4 ng/ml
Vitamin D measurement	• Definition: <50 nmol/L (<20 ng/ml) was defined as vitamin D insufficient in the manuscript, however, VDD: is redefined as <20 ng/ml in our study • Measurement method: ELISA, no seasonal variation in vitamin D concentration in Turkey	
Other	• Selection criteria: N/A	

Karadag et al. (2011)		
Study characteristics	• Study type: case-control, single-center study • Study duration: November 2008 to March 2009 (winter, little exposure to UV light) • Country: Turkey	
Participant characteristics	• No. of subjects: 63 TE (29 ATE, 34 CTE) • Age: 29.1 ± 11.9 years • Gender: Female 63 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A • Disease duration: N/A • Disease severity score/grading: N/A • Alopecia pattern: N/A • FH of alopecia: N/A • Nail involvement: N/A • First/ recurrent episode: N/A • Stable/ active disease: N/A • Treatment information: N/A • Diagnosis and severity assessment: dermatological examinations of all patients were performed by the same dermatologist	• No. of subjects: 50 controls without AA • Age: 28.4 ± 9.4 years • Gender: Female 50 (100%) • Ethnicity: N/A • BMI: N/A • Comorbidity: N/A • Smoking: N/A • Alcohol: N/A • Skin type: N/A • Diet: N/A • Sun-exposure/ sunscreen usage: N/A
Vitamin D data	• VDD: N/A • Level: 21.68 ± 10.67 ng/ml • Correlation: N/A	• VDD: N/A • Level: 15.6 ± 15.8 ng/ml
Vitamin D measurement	• Definition: N/A • Measurement method: radioimmunoassay (RIA)	
Other	• Exclusion criteria: drug abuse, malignancy, hypercalcemia, hypocalcemia, hyperparathyroidism, functional renal or liver abnormalities, systemic lupus erythematosus, syphilis, and any condition causing fever, and patients who were on calcium-phosphorus modifying drugs	