



# Updates in Select Inflammatory Alopecias

Christina Kraus, MD

Assistant Clinical Professor

Department of Dermatology

University of California, Irvine

# Disclosures

- No pertinent disclosures for this talk
- I will be discussing off-label uses of medications

# What Is Alopecia?

Jada Pinkett Smith's hair loss condition played a major role in an incident at the Oscars. Here's what we know about it.



Give this article



295



# Objectives: AA, LPP, CCCA

- Define the utility of oral and topical JAK inhibitors for AA
- Recognize dupilumab may be useful for AA in patients with an atopic phenotype
- Assess use of low dose oral minoxidil as an adjunct therapy
- Recognize importance of shared decision making approach for all hair loss patients
- Define therapies for LPP including dutasteride
- Discuss use of topical metformin for CCCA
- Recognize medical co-morbidities in patients with CCCA

# Alopecia Areata (AA)

# Case photos

# AA Topics to Cover

- Baricitinib
- Topical JAK inhibitors
- Dupilumab
- Oral minoxidil as an adjunct
- Shared decision making with patients
- Association with COVID-19

# ***F.D.A. Approves Alopecia Drug That Restores Hair Growth in Many Patients***

The drug, made by Eli Lilly, is already used for rheumatoid arthritis, and could be followed by two more drugs from other companies.

# FDA Approval of Baricitinib for Alopecia Areata

Clinical Trial > N Engl J Med. 2022 May 5;386(18):1687-1699. doi: 10.1056/NEJMoa2110343.

Epub 2022 Mar 26.

## Two Phase 3 Trials of Baricitinib for Alopecia Areata

Brett King <sup>1</sup>, Manabu Ohshima <sup>1</sup>, Ohsang Kwon <sup>1</sup>, Abraham Zlotogorski <sup>1</sup>, Justin Ko <sup>1</sup>,  
Natasha A Mesinkovska <sup>1</sup>, Maria Hordinsky <sup>1</sup>, Yves Dutronc <sup>1</sup>, Wen-Shuo Wu <sup>1</sup>, Jill McCollam <sup>1</sup>,  
Chiara Chiasserini <sup>1</sup>, Guanglei Yu <sup>1</sup>, Sarah Stanley <sup>1</sup>, Katrin Holzwarth <sup>1</sup>, Amy M DeLozier <sup>1</sup>,  
Rodney Sinclair <sup>1</sup>, BRAVE-AA Investigators

Collaborators, Affiliations + expand

PMID: 35334197 DOI: [10.1056/NEJMoa2110343](https://doi.org/10.1056/NEJMoa2110343)

# Baricitinib for Alopecia Areata

- Dose: 2 mg daily or 4 mg daily
- Trials done in patients with at least 50% hair loss by SALT score for more than 6 months
- Common adverse events:
  - Acne
  - upper respiratory tract infection
  - urinary tract infections,
  - headache
  - elevated creatine kinase levels
  - Increase in LDL and HDL

# Topical JAK Inhibitors for Alopecia Areata

- Compounded topical tofacitinib
- Topical ruxolitinib now FDA approved for atopic dermatitis

Photos

# Dupilumab

Case Reports > [JAAD Case Rep.](#) 2021 Jul 27;16:82-85. doi: 10.1016/j.jdc.2021.07.015.  
eCollection 2021 Oct.

## Dupilumab for the treatment of alopecia areata in children with atopic dermatitis

[Sung Kyung Cho](#)<sup>1</sup>, [Brittany G Craiglow](#)<sup>2 3</sup>

Affiliations + expand

PMID: 34541272 PMCID: [PMC8435985](#) DOI: [10.1016/j.jdc.2021.07.015](#)

Clinical Trial > [Allergy.](#) 2022 Mar;77(3):897-906. doi: 10.1111/all.15071. Epub 2021 Sep 6.

## Phase 2a randomized clinical trial of dupilumab (anti-IL-4R $\alpha$ ) for alopecia areata patients

[Emma Guttman-Yassky](#)<sup>1</sup>, [Yael Renert-Yuval](#)<sup>1 2</sup>, [Jennifer Bares](#)<sup>1</sup>, [Margot Chima](#)<sup>1</sup>,  
[Jason E Hawkes](#)<sup>3</sup>, [Patricia Gilleaudeau](#)<sup>2</sup>, [Mary Sullivan-Whalen](#)<sup>2</sup>, [Giselle K Singer](#)<sup>1</sup>,  
[Sandra Garcet](#)<sup>2</sup>, [Ana B Pavel](#)<sup>4</sup>, [Mark G Lebwohl](#)<sup>1</sup>, [James G Krueger](#)<sup>2</sup>

Affiliations + expand

PMID: 34460948 DOI: [10.1111/all.15071](#)

# Dupilumab

- May be helpful for AA patients with atopy
- Strong association between AD and AA and Th2-related susceptibility basis in AA, suggests utility of dupilumab
- One phase 2 trial found baseline IgE predicts treatment response
- However, some reports of AA developing after dupilumab initiation

## *An Old Medicine Grows New Hair for Pennies a Day, Doctors Say*

Dermatologists who specialize in hair loss say that the key ingredient in a topical treatment worked even better when taken orally at a low dose.



Minoxidil in topical form is not particularly effective for some patients who report disliking leaving the substance in their hair, then stop taking it. But the results are different when taken orally. iStock/Getty

# Oral Minoxidil as an Adjunct Therapy in AA

- LDOM improves thickness and overall hair volume
- Many patients prefer oral to topical therapy
- Good safety profile for hair loss
- Most common side effect is hypertrichosis
- Less data in the pediatric population (usually doses of 0.2 mg/kg/day)
- Systemic adverse events are infrequent and in one study 1.7% of patients discontinued due to side effects

# Minoxidil Dosing

- For hair loss (off label): 0.25-5 mg daily
- Female patients: 0.25 – 2.5 mg
- Male patients: 2.5 – 5 mg (less efficacy with 1.25 mg dosing)
  
- For hypertension doses are typically 10-40 mg daily

# Beach et al. “Cs of Minoxidil Therapy”

- Convenience
- Cosmesis
- Cost savings
- **Co-therapy feasibility**
- Compliance
- Crown efficacy (increased hair growth at crown)

# Don't forget about your other AA therapies:

- Intralesional steroids
- Topical steroids
- Excimer laser
- Antihistamines
- DPCP/squaric acid

Vañó-Galván S, Pirmez R, Hermosa-Gelbard A, et al. Safety of low-dose oral minoxidil for hair loss: A multicenter study of 1404 patients. *Journal of the American Academy of Dermatology*. 2021;84(6):1644-1651.

Randolph M, Tosti A. Oral minoxidil treatment for hair loss: A review of efficacy and safety. *Journal of the American Academy of Dermatology*. 2021;84(3):737-746.

Gupta AK, Talukder M, Venkataraman M, Bamimore MA. Minoxidil: a comprehensive review. *Journal of Dermatological Treatment*. 2022;33(4):1896-1906.

Gupta AK, Carviel JL. Meta-analysis of 308-nm excimer laser therapy for alopecia areata. *J Dermatolog Treat*. 2021;32(5):526-529.

> [JAMA Dermatol.](#) 2022 Aug 17. doi: 10.1001/jamadermatol.2022.3025. Online ahead of print.

# Shared Decision-Making, Therapeutic Choice, and Decisional Regret in Patients With Alopecia Areata

Sophia Reyes-Hadsall<sup>1 2</sup>, Lara Drake<sup>2 3</sup>, Jane J Han<sup>2 4</sup>, Karen J Lee<sup>1 2</sup>, Guohai Zhou<sup>2</sup>, Arash Mostaghimi<sup>2</sup>, Kathie P Huang<sup>2</sup>

Affiliations + expand

PMID: 35976667 DOI: [10.1001/jamadermatol.2022.3025](#)

- The treatments associated with the lowest decisional regret were Janus kinase (JAK) inhibitors, followed by biologics, and deciding not to treat
- Highest decisional regret was reported with anthralin and minoxidil

# You're Not Imagining It: The Pandemic Is Making Your Hair Fall Out

Many doctors report an uptick in patients suffering from stress-related hair loss. Here's what to do about it.



Hair loss can be a side effect of Covid-19. Phimchanok Srisuriyamart/EyeEm, via Getty Images

# AA associated with COVID-19 infection, vaccination

- Symptoms of AA after COVID-19 infection or vaccination
- Possibly due to upregulation of TNF-alpha, IFN-gamma
- Likely both immune dysregulation and medical/psychosocial stress
- Most cases reported 1-2 months following infection

LETTER TO THE EDITOR | [Free Access](#)

## Alopecia areata after COVID-19 infection and vaccination: A cross-sectional analysis

Betty Nguyen , Antonella Tosti

SYSTEMATIC REVIEWS/META-ANALYSIS | VOLUME 7, P57-61, JUNE 01, 2022

## Association between alopecia areata and COVID-19: A systematic review

Rachel E. Christensen, BS   • Mohammad Jafferany, MD

[Open Access](#) • Published: February 09, 2022 • DOI: <https://doi.org/10.1016/j.jdin.2022.02.002> •

# Cicatricial/Scarring Alopecias: LPP and CCCA

# Cicatricial Alopecia is Underdiagnosed

- In one study nearly 1 in 15 new patients presenting to a PRP clinic had undiagnosed cicatricial alopecia
- Clinical signs of scalp inflammation (erythema, perifollicular scale) can be subtle in early stages and particularly in skin of color
- With LPP, therapies focused more on inflammation
- With CCCA, therapies focused more on fibrosis

# Lichen Planopilaris (LPP)

# Case photos

# LPP

- Primary lymphocytic cicatricial alopecia
- Frontal fibrosing alopecia (FFA) is a clinical variant
- Treatments traditionally include:
  - Topical and intralesional steroids
  - Calcineurin inhibitors
  - Doxycycline, minocycline
  - Hydroxychloroquine
  - Systemic immunosuppressants
  - Oral retinoids

# Dutasteride for LPP/FFA

- Retrospective study of 224 patients found oral dutasteride most effective compared to other systemic therapies and no treatment
- Response associated with increasing dose
- Most effective dose: 5-7 capsules of dutasteride 0.5 mg per week

# Additional Therapies for LPP

- JAK inhibition as a possible approach for refractory disease?
- Low dose oral minoxidil
- Oral apremilast

# Vitamin D Deficiency and LPP

- Patients with LPP or FFA are more likely to have vitamin D deficiency or insufficiency than the general population
- Consider checking vitamin D levels in patients with LPP/FFA

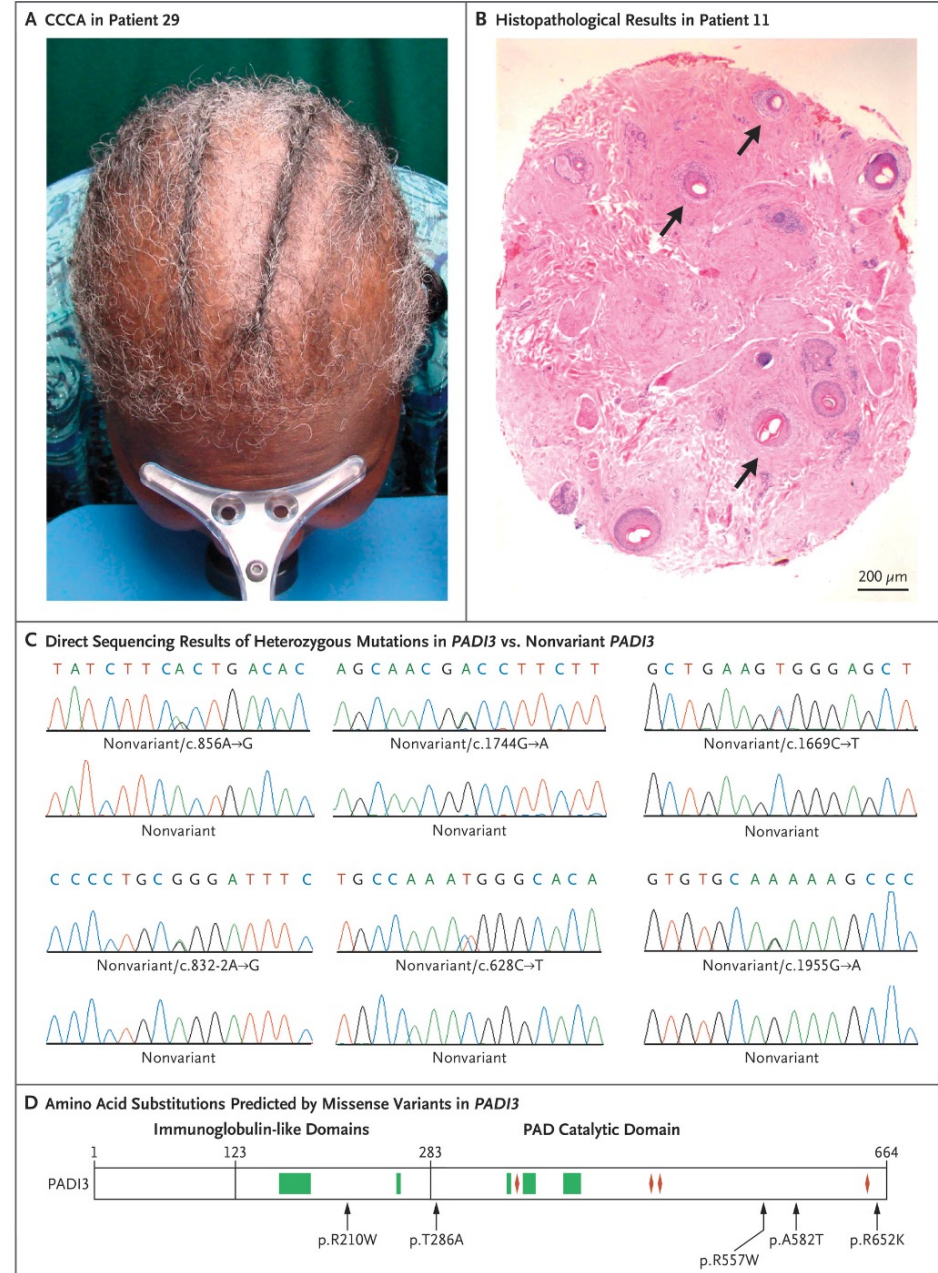
# Central Centrifugal Cicatricial Alopecia (CCCA)

# Case photos

# CCCA

- Begins on central crown and widens over time
- Variants that affect lateral or posterolateral scalp reported
- Predominantly in women of African descent
- Patients may or may not have symptoms
- Fibrosis >>> inflammation
- Early-stage CCCA may have lymphocytic infiltrate but clinical signs often not seen

- Mutations in *PADI3*, which encodes a protein that is essential to proper hair-shaft formation
- Treatment: Similar to that of LPP
- ★ Resident Pearl: *PADI3* mutations are also implicated in uncombable hair syndrome



# Fibroproliferative genes in CCCA

- Upregulation of genes in fibroproliferative disorders (keloids, atherosclerosis, fibroids) in patients with CCCA
- Genes included PDGF, COL I, COL III, MMP1, MMP2, MMP7, MMP9
- Antifibrotic therapies may play a role in management

# Topical Metformin

- Cases of hair regrowth after topical use of metformin
- Metformin has shown efficacy in improving fibrosis through AMPK activation
- Metformin 10% compounded in lipoderm was used in this study

# CCCA and Associated Co-Morbidities

- Vitamin D deficiency
  - Black individuals with CCCA had >5 times increased odds of vitamin D deficiency/insufficiency in one study
- Poor glycemic control and increased CCCA severity
- Hyperlipidemia
- Association with history of breast cancer

Collins MS, Ali S, Wiss IP, Senna MM. Increased risk of vitamin D deficiency and insufficiency in Black patients with central centrifugal cicatricial alopecia. *Journal of the American Academy of Dermatology*. 2022;87(3):689-691.

Ali S, Collins M, Taylor SC, Kelley K, Stratton E, Senna M. Type 2 diabetes mellitus and central centrifugal cicatricial alopecia severity. *Journal of the American Academy of Dermatology*. 2022;0(0).

Leung B, Lindley L, Reisch J, Glass DA, Ayoade K. Comorbidities in patients with central centrifugal cicatricial alopecia: A retrospective chart review of 53 patients. *Journal of the American Academy of Dermatology*. Published online June 2022:S0190962222009987.

Brown-Korsah JB, Roche FC, Taylor SC. Association of breast and colorectal cancer in patients with central centrifugal cicatricial alopecia: A retrospective, cross-sectional pilot study. *Journal of the American Academy of Dermatology*. 2021;84(3):859-860.

If there are multiple causes of hair loss or you're not sure what you're treating....

Consider oral minoxidil therapy

# Summary

- Consider oral or topical JAK inhibitors for AA depending on patient co-morbidities and disease severity
- Dupilumab may be helpful for AA in patients with atopy
- LDOM is useful as an adjunct for inflammatory alopecias
- Shared decision making is an approach that should be utilized for all hair loss patients
- Consider addition of dutasteride for LPP
- Consider topical metformin for CCCA
- Screen CCCA patients for other medical co-morbidities

Thank You!