Pearls and Pitfalls: Diagnosis and Management of Severe Alopecia in Children

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I will be discussing off-label use of medications
Progressive patch of hair loss

- 9 yo boy, hx of AD- single patch of hair loss- Rx cephalexin, griseofulvin
- Rash- given prednisone
- Hair loss progressive
- Acquired, patchy, +inflammation
- DDX: tinea capitis, tinea capitis, tinea capitis
- Culture + *T. tonsurans*
Tinea Capitis- Pearls and Pitfalls

- Most likely cause of inflammatory alopecia in school-aged children
- Consider host/fungal factors: race, atopy, immunosuppression, zoonotic vs anthophilic
- *T. tonsurans* predominant organism (91%), *M. canis* (3%) (2007)

![Graph showing trends in rates of tinea capitis per 10,000 children <16 years of age](image)


Treating tinea capitis

First line treatment:
- Griseofulvin: tablet or suspension: 20 to 25 mg/kg per day for 6-12 weeks (best absorbed with fatty food)
- Terbinafine: granules or tablets (weight based) 4-6 weeks

Efficacy: meta-analysis: no significant difference*
- griseofulvin superior for *Microsporum*
- terbinafine superior for *Trichophyton*

Adjunctive treatment: antifungal shampoos, topical antifungals

Kerion: prednisone- unclear benefit

*Meta-analysis of randomized, controlled trials comparing particular doses of griseofulvin and terbinafine for the treatment of tinea capitis.*

Gupta AK, Drummond-Will C.
14 yo boy with longstanding hair loss

- Born with full head of hair
- Lost hair after a few months, no haircuts
- Developmentally normal, no dental/skin abnormalities
- FH of same hair changes
- Congenital, diffuse, no associated findings
- Tug test + fragility

DDX:
- Hair shaft disorder
- Alopecia areata
- Atrichia with papules
- Ectodermal dysplasia

Photos courtesy of Dr. Elizabeth Seidler
Hair Mount

- To examine hair shaft or bulb
- Mounting medium: Permount, cytoseal, mounting oil
Monilethrix

- Autosomal dominant
- Elliptical nodes with regular periodicity, hair shaft constricted
- Disease of hair cortex. Mutations of type II hair-specific keratins (hHb1, 3, 5, 6)
- May improve with hormonal changes (puberty/pregnancy)
- Treatment: acitretin, minoxidil
Rapidly progressive hair loss

- 18 month old healthy girl
- Born with hair, +haircut
- Patchy loss, progressive to complete hair loss in 2 months
- Acquired, diffuse, no inflammation
- +nail changes
- DDX:
  - Alopecia areata-universalis
Treatment for Extensive patchy AA or AA totalis/universalis

Preschool children
- No treatment
  - Child not aware
  - Treatment does not alter course
  - Weigh the risks and benefits
- Counseling/support for parents
  - National alopecia areata foundation (www.naaf.org)
- Topical corticosteroids
- Topical minoxidil
Treatment of severe AA in school age children

- No treatment
- IL corticosteroids (5 or 10mg/cc-20mg total)
- Cocktail:
  - Topical minoxidil 5% bid
  - Short contact anthralin (up to 30min)
  - Topical corticosteroid (fluocinonide solution)
- Topical immunotherapy (squaric acid, diphenylcyclopropenone)
- Systemic immunosuppressive agents (rarely)
- Janus kinase inhibitors

References:


Treatment-resistant alopecia areata. Response to combination therapy with minoxidil plus anthralin.

Fiedler VC, Wendrow A, Szpunar GJ, Metzler C, Devillez RL.
Alopecia areata totalis in a 12 yo boy

Ophiasis: Treatment:
- minoxidil, anthralin, topical corticosteroid

Progressed to totalis:
- Squaric acid- regrowth after 4 months but then recurrent loss
- DPCP- minimal regrowth after 4 months
Immunotherapy with anthralin

- Continued DPCP
- Added anthralin short contact on non-DPCP days

Efficacy and safety of diphenylcyclopropenone alone or in combination with anthralin in the treatment of chronic extensive alopecia areata: a retrospective case series.

Durgu M, Ozcan O, Baba M, Sekkin O.
25 year old male
Psoriasis and alopecia areata universalis (Renbok)
Failed adalimumab
Tofacitinib 5mg bid increased to 15mg bid
Targeting the inflammatory pathways in AA

- Janus kinase inhibitors
  - Ruxolitinib (JAK 1,2)
  - Tofacitinib (JAK 3)
- Side effects
  - Infection/malignancy
  - Lipid elevation
  - Lymphopenia
Use of JAK inhibitors for AA

- In adults: oral tofacitinib (5mg bid)- 90 patients
  - 77% clinical response
  - 58% had greater than 50% change in SALT score
- In adolescents 9/13 experienced clinically significant hair regrowth
- Hair loss recurrent when medication stopped

Tofacitinib for the treatment of severe alopecia areata and variants: A study of 90 patients.
Liu LY1, Craiglow BG2, Dai F3, King RA4.

Tofacitinib for the treatment of alopecia areata and variants in adolescents.
Craiglow BG1, Liu LY2, King RA3.
Pattern Recognition
Hair Loss in an Infant

Halo scalp ring

- Pressure on the vertex scalp from the cervix at birth
- Primigravidas
- May resolve over months to years—scarring has been reported
- No further workup

Photo courtesy of Dr. Linda Beets-Shay

Halo scalp ring: a cause of scarring alopecia.
Prendiville JS, Esterly NB.
Symmetric, marginal hair loss

- Traction alopecia
- Counseling: if it is painful, tender-
  STOP
Take home pearls

Hair loss in children:
- Acquired
  - Patchy hair loss with inflammation- always consider tinea capitis
  - Congenital- look for associated findings, do a hair mount

Alopecia areata:
- Consider combination topical therapies
- JAK inhibitors promising