MASTERS OF PEDIATRIC DERMATOLOGY

PEDIATRIC PSORIASIS: Diagnosis and What's New in Treatment

PEER TO PEER TOOLKIT

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POWERED BY LivDerm

MASTERS OF PEDIATRIC DERMATOLOGY

PSORIASIS: OVERVIEW

- Chronic, multisystem, inflammatory disease
- Characterized by bright red, plaques with silvery scales
- Wide spectrum of clinical manifestations (scalp, nails, joints, palmoplantar)
- Can have an immense impact of QOL

PEDIATRIC PSORIASIS

- A chronic, multisystem inflammatory disease that affects 1% of children
- Each year, about 20,000 children < 10 years of age are diagnosed with psoriasis
- Most common time of onset: adolescence
- One third of cases of psoriasis start in childhood
- Multiple comorbidities: psoriatic arthritis has largest evidence base

AAD GUIDELINES: Journal American Academy of Dermatology 2020

CLINICAL MANIFESTATIONS OF PEDIATRIC PSORIASIS

- Plaque
- Inverse
- Guttate
- Pustular
- Erythrodermic
- Scalp
- Diaper area
- Palmoplantar
- Nail
- Extracutaneous involvement

PSORIASIS IN MINORITY PATIENTS: NATIONAL PSORIASIS FOUNDATION STUDY

- Found 72% of minorities reported an impact on their QOL due to psoriasis (54% in Caucasians)
- African Americans and Hispanic/Latino psoriasis patients experience a greater negative impact on QOL compared to Caucasians, irrespective of severity
- A higher percentage of African Americans (23%) reported having very severe psoriasis compared to Caucasian patients (8%)

Alexis AF, Blackcloud P. J Clin Aesthet Dermatol. 2014;7(11):16-24
Yan D, Afifi L, Jeon C, et al. Dermatology Online J. 2018;24(7):4

PSORIASIS IN MINORITY PATIENTS: ETHNO-RACIAL PRESENTATIONS

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PSORIASIS IN MINORITY PATIENTS: TREATMENT GAPS

- In the United States, Black patients are less likely to receive biologic treatment for psoriasis compared to White patients
- In a 2015 study, the odds of receiving a biologic therapy to treat psoriasis was 69% lower in Black patients than in White patients
- Biologic-naive participants were more likely to be receiving phototherapy or topical therapy only
- They were also less likely to have received oral systemic therapy in the past

Takeshita J, Gelfand JM, Li P, et al. Psoriasis in the U.S. Medicare population: prevalence, treatment, and factors associated with biologic use. J Invest Dermatol. 2015;135(12):2955-2963, Takeshita J et al. J Invest Dermatol. 2019;139(8):1672-1679.

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SCALP PSORIASIS

- Minority groups are less likely to see a dermatologist for their psoriasis in the US
- Scalp psoriasis in AA have used traditional/cultural therapies before seeking dermatologic consultation

GUTTATE PSORIASIS

- Guttate psoriasis occurs in all races
- Pruritic
- Common triggers
- Postinflammatory pigmentary changes can follow
- Pearl: Asia descent often small plaque variant (DDx)

INVERSE PSORIASIS

- AKA Intertriginous or flexural psoriasis
- Inframammary, axillae, inguinal folds
- Sharply demarcated
- Lacks thick silver scales
- Smooth, moist, macerated

Fischer AH, Shin DB, Gelfand JM, Takeshita J. Health care utilization for psoriasis in the United States differs by race: an analysis of the 2001-2013 Medical Expenditure Panel Surveys. J Am Acad Dermatol. 2018;78(1):200-203

INFANTILE PSORIASIS

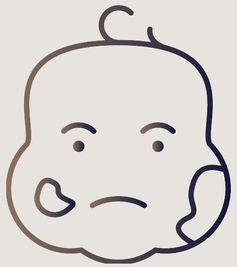
- Psoriasis in infants typically involves the diaper area and face
- Symmetrical, well-demarcated
- Nail findings (10%) infants
- Lesions may be pruritic
- Pearl: Usually less white scales on the plaques of infants

DIFFERENTIAL DIAGNOSIS

- Intertrigo
- Candidiasis
- Erythrasma
- Hailey-Hailey disease
- Darier disease

DIAGNOSTIC TOOLS FOR APPROPRIATE IDENTIFICATION OF PSORIATIC LESIONS

- Biopsy
- Dermoscopy



COMORBIDITIES IN PEDIATRIC PSORIASIS

- **Psoriatic Arthritis**
- Obesity
- Hyperlipidema
- Diabetes Mellitus
- Rheumatoid Arthritis
- Inflammatory Bowel Disease

PEDIATRIC PSORIASIS: Diagnosis and What's New in Treatment

PSORIATIC ARTHRITIS IN PEDIATRIC PATIENTS

- Psoriatic arthritis in all pts: 5 to 40%
- Onset of skin disease typically precedes onset of joint disease by 10 years
- Peak onset between ages 9 and 12 years
- Up to 20 % of all childhood arthritis is Psoriatic Arthritis
- **If a child has Psoriatic Arthritis, Assess For Uveitis**
- **Therapies: Education, Coal Tar, Topical Steroids, Moisturizers**

PEDIATRIC PSORIASIS: Diagnosis and What's New in Treatment

PEDIATRIC PSORIASIS THERAPY

Only **7 FDA medications approved** for pediatric patients

Biologics:

- Etanercept: ≥ 6 years
- Ustekinumab : ≥ 6 years approved for psoriatic arthritis in children
- Ixekizumab: ≥ 6 years
- Secukinumab: ≥ 6 years (May 2021)

Topicals: Roflumilast: PDE 4 inhibitor: ≥12 years

- used systemically in COPD in adults
- Calcipotriene Foam 0.005%: **≥ 4 years** scalp and body
- Calcipotriene 0.005% and betamethasone 0.064% **foam** or **ointment**

≥12 years: mild to severe plaque psoriasis

- Calcipotriene 0.005% and betamethasone 0.064% **suspension**: scalp and body: **≥ 12 years**

PEDIATRIC PSORIASIS THERAPY BY AGE

YOUNG CHILDREN

- Consider Strep Throat
- Tar
- Topical Steroids
- Topical Calcineurin Inhibitors (Inverse Psoriasis)
- Phototherapy

OLDER CHILDREN

- Topical Steroids / Other Topicals
- Phototherapy / Laser
- Methotrexate
- Cyclosporin
- Retinoids : Topical / Oral
- Biologics

AAD GUIDELINES FOR PEDIATRIC PSORIASIS: SYSTEMIC

Table XXXVI. Suggested monitoring for nonbiologic systemic medications for pediatric psoriasis*

Medication†	Baseline	Follow-up	Miscellaneous	Refer
Methotrexate Dose range: 0.2-0.7 mg/kg/wk Maximum: 25 mg/wk (see text for details)	CBC with diff, platelets Renal function‡ Liver function If at risk: hepatitis A, B, C, HIV PPD or other TB tests for latent TB screening‡	CBC with diff, platelets (5-7 days after initiating therapy) Renal function‡ LFTs (monthly for the first 3 months, then every 3 to 6 months) Annual TB test if at risk‡	Liver enzymes rise after dose; check labs 4-6 days after the last dose Liver biopsy often avoided/not indicated in pediatric patients but should be individualized to clinical context Avoid in children with liver risk factors Chest radiograph for symptoms	101,1
Acitretin Dose range: 0.1-1 mg/kg/d (see text for details)	CBC Fasting lipids Liver function Pregnancy test (if appropriate)	Liver function and fasting lipids after 1 month of treatment and with dose increases, then every 1-3 months Monthly pregnancy test (if appropriate)	Bone imaging based on symptoms and duration of treatment (see text)	101,1
Cyclosporine Dose range: 2-5 mg/kg/d (see text for details)	Blood pressure CBC Renal function Liver function Fasting lipids Serum magnesium and potassium uric acid HIV if at risk	Blood pressure once a week for the first month and at follow-up visits as needed. CBC, serum creatinine, BUN, uric acid, potassium, lipids, and magnesium every 2 weeks for the first month and then at least monthly thereafter	Whole-blood cyclosporine trough level if inadequate clinical response or concomitant use of potentially interacting drugs	101,1

BUN, Blood urea nitrogen; *CBC*, complete blood count; diff, differential; *LFT*, liver function test; *PPD*, protein derivative test; *TB*, tuberculosis.

*Some monitoring suggestions are not evidence-based recommendations and are expert consensus. These recommendations may vary based on patient age and specific protocols. Prac physicians should individualize monitoring protocols according to the clinical context. For all pediatric patients receiving long-term systemic therapy, growth parameters should also be moni

†Dosing is based on actual weight.

‡At the discretion of the physician based on the clinical situation/individual risk factors.

VITAMIN D ANALOGUES

- Often Used In Conjunction With Topical Steroids
- Aad Guidelines
- Use Of Up To 45 G/ Week/ M2
  - No Effect On Serum Calcium Levels
- Localized Irritation Of Skin

METHOTREXATE

- Used for Psoriasis Since the 1950'S
- Used Safely in Ages 2 to 16 for Erythrodermic, Plaque, Pustular Psoriasis and Psoriatic Arthritis
- Dose Range: 0.2 To 0.7 Mg/Kg/ Week
- I still give a test dose and check CBC in one week

Table XXXVII. Recommendations for pediatric psoriasis and methotrexate therapy

Recommendation No.	Recommendation	Strength of recommendation
18.1	Methotrexate is recommended as an effective systemic therapy for moderate to severe plaque psoriasis and other psoriasis subtypes in children.	B
18.2	Methotrexate is recommended as an effective systemic therapy for pustular psoriasis in children.	B
18.3	Methotrexate weight-based dosing is recommended in younger children, ranging from 0.2 to 0.7 mg/kg/wk (maximum, 25 mg/kg/wk).	B
18.4	Folic acid supplementation daily or 6 times weekly during treatment with methotrexate is recommended.	B
18.5	Routine clinical and laboratory monitoring is recommended before and during treatment with methotrexate.	B

CYCLOSPORIN

- Off label in Pedi Psoriasis
- FDA approval for pedi transplant – 6 months
- Effective and tolerated for Psoriasis TX in kids as young as 11 mos
- In doses from 1.5 Mg to 5 mg/kg/day for 6 weeks to 2 years
- Often used in combination with topicals

CYCLOSPORIN

- Acts rapidly
- Clinical improvement as early as 2 weeks; may require 4 to 8 weeks for full response
- As kids have higher bsa to weight ratios and age dependent differences in pharamacokinetics, may require higher doses than adults
- May need 5 mg /kg/day

Vaccinations :
- May be less effective during therapy
- **Live attenuated vaccines to be avoided**

Metabolism by P450 system:
- Advise regarding food and drug interactions

PEDIATRIC PSORIASIS: Diagnosis and What's New in Treatment

REVIEW

Management of pediatric plaque psoriasis using biologics

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Toronto, Ontario; Vancouver, British Columbia; Edmonton and Calgary, Alberta; Montreal, Quebec; and St John's, Newfoundland, Canada

Background: Psoriasis is a chronic inflammatory disease with clinical manifestations of the skin that affect adults and children. In adults, biologics have revolutionized the treatment of moderate to severe plaque psoriasis where clear or almost clear is a tangible goal. Research on biologics has recently been extended to children. The introduction of these new therapeutic options has outpaced the limited guidelines in this population.

Objective: To provide a review of current data on biologics, with a proposal for a clinically relevant treatment algorithm on the management of moderate to severe plaque psoriasis in the pediatric population.

Methods: A Canadian panel with expertise in psoriasis, pediatric dermatology, and experience with consensus recommendation processes was selected to review the current landscape of pediatric psoriasis and clinical data on biologics plus identify special considerations for baseline workup and monitoring. Recommendations were reviewed and edited by each expert in an iterative process.

Conclusion: A treatment algorithm for moderate to severe plaque psoriasis in pediatric patients is presented, incorporating approved biologics. Guidance on baseline screening and ongoing monitoring is

JAMA Dermatol. 2020 Feb 5. doi: 10.1001/jamadermatol.2019.4835. [Epub ahead of print]

A Comparison of Psoriasis Severity in Pediatric Patients Treated With Methotrexate vs Biologic Agents.

Bronckers IMGJ[1], Paller AS[2,3], West DP[2,3], Lara-Corrales I[4], Tollefson MM[5], Tom WL[6,7], Hogeling M[8,9], Belazarian L[10], Zachariae C[11], Mahé E[12], Siegfried E[13,14], Blume-Peytavi U[15], Szalai Z[16], Vleugels RA[17], Holland K[18,19], Murphy R[20], Puig L[21], Cordoro KM[22,23], Lambert J[24], Alexopoulos A[25], Mrowietz U[26], Kievit W[27], Seyger MMB[1]; Psoriasis Investigator Group, the Pediatric Dermatology Research Alliance, and the European Working Group on Pediatric Psoriasis.

Conclusion: Biologic Response Better Than Methotrexate

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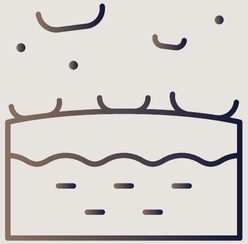

TRIGGERS OF PEDIATRIC PSORIASIS

- Group A β hemolytic Streptococcal infection
- (M protein)
- Beta blockers
- Lithium
- Biologics
- Systemic steroids on cessation of therapy

MIMICKERS OF PEDIATRIC PSORIASIS

- Sodium valproate-induced psoriasiform drug eruption
- Sanitizing hand and diaper wipes containing:
- Methylchorothiazolinone
- Periorificial or perineal psoriasis form
- Distribution

FUTURE PEDIATRIC PSORIASIS THERAPY

BIOLOGICS:

- Brodalumab: anti IL 17: 6 to 17 years of age
- Tildrakizumab: IL 23 inhibitor : 12 to 17 years of age

TOPICALS:

- Halobetasol 0.01%/ tazarotene 0.045% lotion

CONCLUSION

- Many children do suffer with Psoriasis
- Few current FDA approved medications
- Fewer studies in children than adults
- Recent literature to guide therapy
- Disparities among minorities