Issue 1: January - March 2024

Pederm Insights

An official publication of Pediatric Dermatology Foundation

In this Issue

Forthcoming Events

Masterclass in Pediatric Dermatology

For Postgraduate Students on
24th March 2024 at IGICH, Bengaluru

Gene Genome Genetics

For Pediatric Dermatologists on
21st April 2024 at Mumbai

For Details and registration- Visit:
www.peddermfoundation.org

Pediatric Dermatology Foundation is dedicated to further advancing Pediatric Dermatology in India. Our goal is to promote education and research in this field.

We plan to conduct annual conferences to refresh and update Pediatric Dermatology knowledge among practicing dermatologists. We also envisage an exam-oriented session once a year for postgraduate students. For those craving in-depth CME sessions on specific hot Pediatric Dermatology topics, there is something in store for you as well. This year, it is going to be pertaining to genodermatoses, an extremely important issue currently. To sustain the momentum throughout the year, we aim to have a slew of digital meetings at regular intervals, that you can attend from the comfort of your homes.

The written word is extremely important. This newsletter, helmed by Dr. Sahana, is a stepping stone in that direction.

Our patients and their parents deserve to be explained salient features of various skin diseases. To that end, we are preparing patient information leaflets in various languages.

These are some of the things that we have thought of. But we would love to broaden our vision and do more, based on suggestions that you have for us. Please write to us on peddermfoundation@gmail.com.

Team PDF

*'**Big things have small beginnings**' may have been lines spoken about a small army taking on a large one, as in the film Lawrence of Arabia, but is equally applicable in different life situations.*

It is with profound pleasure that I write this editorial to welcome you to our new venture 'Pederm Insights', an official publication from the Pediatric Dermatology Foundation. I thank Dr Deepak Parikh for entrusting this task to me. The focus of this newsletter is to create space for knowledge sharing and the latest updates in the field of pediatric dermatology for practicing dermatologists and pediatric dermatologists.

I present the first issue with different facets of pediatric dermatology: literature review of recent pediatric dermatology articles from both dermatology and non-dermatology journals, an interesting case vignette, a crossword puzzle (especially for budding dermatologists), dermoscopy, drug dosing in children, and an interesting section for the residents fascinated to work in the field of pediatric dermatology.

I thank all the editorial and advisory board members for their support and contributions. I hope all our readers enjoy this edition. We seek to grow by sharing our knowledge through this endeavour.

Happy reading!

Happy New year!!

Sahana M Srinivas

Editor-in chief

Journal Review

Bakaa L, Pernica JM, Couban RJ, Tackett KJ, Burkhart CN, Leins L, et al. Bleach baths for atopic dermatitis: A systematic review and meta-analysis including unpublished data, Bayesian interpretation, and GRADE. Ann Allergy Asthma Immunol. 2022; 128(6):660-668.e9.

In the past few decades, dilute bleach baths have become a common and inexpensive adjuvant maintenance therapy for moderate to severe atopic dermatitis. Bakaa, et al. conducted a systematic review and meta-analysis of randomized controlled trials (RCT) regarding the efficacy and safety of bleach baths for atopic dermatitis. Paired reviewers independently screened the records for titles, abstracts, full texts and in duplicate for eligibility. Information on study characteristics, baseline demographics, control and intervention details and outcome data were collected. A total of 2559 records were screened and finally the authors included 12 reports, representing 10 RCTs, four unpublished and six published data. The included studies enrolled 307 patients with mild to severe atopic dermatitis at baseline. (SCORAD mean of means 44.27). The median of mean age was 7.2 years, EASI baseline mean of means 23.38, and a median follow-up for 6 weeks. Bleach baths improve atopic dermatitis severity by 22% (one in 10 will likely improve severity by 50%) and slightly reduce staphylococcus aureus colonization in the skin. The most common adverse effects noted were dry skin and irritation. Other patient outcomes like itch, sleep quality, quality of life and risk of atopic dermatitis flares were uncertain. This systematic review provides a moderate evidence that bleach bath 2-3 times per week, improves atopic dermatitis severity with little or no side effects.

Comments:

Despite the widespread use of bleach baths all over the world, the evidence regarding safety and efficacy is unclear. This study has pooled the results of RCTs conducted on bleach baths for atopic dermatitis. Most of these studies have few patients and vary in their methodology and outcome. However, the authors with appropriate statistical analysis have found dilute bleach baths to be improve atopic dermatitis severity with no toxicity. Bleach, being an inexpensive product is a useful approach for long-term maintenance, 2-3 times per week for moderate to severe atopic dermatitis, especially in Indian scenario where cost plays a major role. This systematic review has further provided moderate evidence regarding efficacy and safety of bleach baths in atopic dermatitis.

(Submitted by: Sahana M Srinivas)

Barak Levitt JA, Alemi S, Ollech A, Reiss-Huss S, Sah M, Renert-Yuval Y, et al. Treatment with Methotrexate in Infants and Toddlers with Atopic Dermatitis: A Retrospective Multi-Center Study. J Clin Med. 2023;12(16):5409.

Management of severe atopic dermatitis in toddlers is challenging due to the limitation of usage of systemic agents in this age group due to adverse effects. The authors of this study have aimed to investigate the efficacy and safety of methotrexate in pediatric atopic dermatitis. This is a retrospective study, conducted at three referral centres between 2016 through 2022, comprising 28 infants/toddlers less than four years of age with atopic dermatitis treated with methotrexate for at least 8 weeks. A partial response was defined as a 50% reduction in the initial IGA score and almost complete response defined as achievement of 0/1 IGA score. The median age at disease onset was 0.4 years. The mean age of methotrexate initiation was 2.6 ± 1.2 years and the mean IGA score was 3.78 ± 0.4. The average dose administered during the treatment period was 0.45mg/kg and the median treatment duration was 5 months. The response rate was 50% and IGA score of 0/1 was achieved in 14.2% and 21.4% following 12 and 24 weeks of methotrexate treatment. Adverse effects were seen in 16 (57.1%) children, but only two children discontinued the treatment. The side effects being gastrointestinal symptoms, anemia and elevated liver enzymes. There was a gradual decline in the patient count from beginning (28, 100%) to 40% at week 24 and 10% at 60th week. Parental concern for treatment discontinuation was seen in 28.5 percent. The limitations of this study was small sample size, retrospective nature and lack of control group.

Comments:

To date, dermatologists are apprehensive in treating young children with immunosuppressants. Though the study is of a retrospective nature, methotrexate has shown moderate efficacy and good safety profile in treating severe atopic dermatitis in toddlers which further increases the evidence. Counseling parents about the long-term safety through proper monitoring can increase the treatment adherence. Recent consensus treatment guidelines have also recommended that live vaccines are not a contraindication for starting methotrexate (Pediatric Dermatology 2023; 40:789–808.) which further supports the safe use of methotrexate as an off-label therapeutic option in toddlers for severe atopic dermatitis, where other immunosuppressants are contraindicated. Further studies with a larger sample size would give a better insight about the safety and efficacy.

(Submitted by: Sahana M Srinivas)

Hidayati AN, Sawitri S, Sari DW et al. Efficacy of vitamin D supplementation on the severity of atopic dermatitis in children: A systematic review and meta-analysis [version 2; peer review: 2 approved] F1000Research 2023, 11:274.

Vitamin D, as one of the many new emerging therapies for Atopic Dermatitis (AD), is still under research. The above mentioned study, a systematic review and meta-analysis, was conducted on four trials published between the years 2010-2020 to demonstrate the efficacy of vitamin D on AD severity. The target group was between ages 0-18 years. The sample size, dose and duration of vitamin D differed in all the studies. Effect of vitamin D supplementation in patients with AD was assessed by various AD scoring systems such as SCORAD, EASI, IGA. These scores were found to decrease significantly after vitamin D supplementation in the intervention group: a mean difference of 0.93 (95%CI -1.76, to -0.11, p<0.001) of patient outcome, as compared to the placebo group was found. However, no difference in the cure rate was found between both the groups.

This study was the first meta-analysis to have been conducted in the paediatric population to study the efficacy of vitamin D supplementation in patients with AD. Also, the first to calculate the risk ratio outcome by cure rate in the interventional group as compared to the placebo group.

However, the studies included were very few. Dose and duration of vitamin D supplementation differed amongst the studies. Additionally, they were carried out in different geographic locations with variation in the sun exposure and dietary intake adding on to the heterogeneity. Most of the studies did not measure pre and post vitamin D levels.

Comments:

The role of vitamin D in AD has been explored at great lengths in the last decade. It strengthens the barrier function of the epidermis, regulates the innate immune system and increases the antimicrobial activity. Previous studies have demonstrated a reduction in Staphylococcus aureus colonization after supplementing vitamin D in children with AD.

Another meta-analysis conducted in 2022 found that AD patients were at a high risk of developing vitamin D deficiency. The levels were low, and more so with severe AD as compared to mild AD. The eczema scores improved after adding Vitamin D to the regime (Computational and Mathematical methods in Medicine 2022; https://doi.org/10.1155/2022/9407888).

Hence, vitamin D supplementation may have a role to play in reducing the severity of AD in children and improving the cure rate. This study validates our practice of supplementing Vitamin D in children with AD. However, serum levels must be checked beforehand to prevent hypervitaminosis. The dose, frequency, duration and monitoring of levels should be standardised. Further studies are warranted to establish this theory.

(Submitted by: Preeti K Sheth)

Eichenfield LF, Gower RG, Xu J, Alam MS, Su JC, Myers DE, Sanders P, Vlahos B, Zang C, Lan J, Werth J. Once-Daily Crisaborole Ointment, 2%, as a Long-Term Maintenance Treatment in Patients Aged ≥ 3 Months with Mild-to-Moderate Atopic Dermatitis: A 52-Week Clinical Study. Am J Clin Dermatol. 2023

Topical atopic dermatitis (AD) treatments used reactively often fail to achieve lasting disease control; many of these therapies are associated with safety concerns that limit long-term use. The aim of the study was to evaluate the long-term efficacy and safety of crisaborole once daily (QD) compared to vehicle QD as a maintenance therapy to reduce the incidence of flares in patients with atopic dermatitis who previously responded to crisaborole twice daily (BID). The study was a randomized, double blind, vehicle controlled 52 week, phase III trial in patients aged ≥3 months with mild-to-moderate atopic dermatitis involving ≥5% BSA. A total of 497 patients entered the open-label run-in period with crisaborole BID, of which 270 patients were randomized into the 52-week double-blind maintenance period of the study. Of 270 patients, 135 were randomly assigned to the crisaborole QD group and 135 to the vehicle QD group. Patients who experienced a flare (Investigator's Static Global Assessment (ISGA) score ≥ 2) during the double-blind maintenance period switched to crisaborole BID for up to 12 weeks. During this period, patients were assessed every 4 weeks; if the flare resolved (ISGA score ≤ 1), patients resumed their assigned treatment. It was observed that the median time of flare-free maintenance was longer for patients who received crisaborole versus vehicle (111 vs 30 days, respectively). Mean number of flare-free days was higher for patients who received crisaborole versus vehicle (234.0 vs 199.4 days, respectively). Mean number of flares was lower for patients who received crisaborole versus vehicle (0.95 vs 1.36). No clear trend was observed in maintenance of pruritus response between crisaborole and vehicle treated patients.

COMMENTS: Although both topical calcineurin inhibitors (TCIs) and crisaborole are first line treatment options for acute and maintenance treatment in AD, TCIs are associated with burning/stinging upon application, and patient education is required due to boxed warning of an increased risk of lymphoma. Crisaborole, on the other hand, is well tolerated, effective and safe as monotherapy for both acute as well as long-term maintenance treatment in pediatric (age ≥3 months) and adult patients with mild-to-moderate AD.

(Submitted by: Jeta Buch)

Li H, Dai T, Liu C, Liu Q, Tan C. Phenotypes of atopic dermatitis and the risk for subsequent asthma: A systematic review and meta-analysis. J Am Acad Dermatol. 2022 Feb;86(2):365-372.

Atopic Dermatitis (AD) is one of the risk factors for subsequent development of asthma. Various AD phenotypes display a distinctly heterogenous risk for progression into asthma. The aim of the study was to investigate an association between the two. The article, a systematic review and meta-analysis, included 39 publications from 1995 to 2021 with a sample size of 458810 participants. Only prospective cohort studies were included to evaluate the progression from AD to asthma. Risk estimates were provided by majority of studies. The confounding factors contributing to asthma were adjusted in this meta-analysis to reduce bias. AD was categorized as mild, moderate and severe according to the eczema scores. The relative Risk (RR) for asthma in AD was 2.16 (95% CI, 1.88-2.48) as compared to the general population. The risk in persistent AD (RR, 3.36; 95% CI, 2.83-3.99) was higher than in transient AD (RR, 1.52; 95% CI, 1.34-1.73). Also, the risk in severe AD (RR, 2.40; 95% CI, 1.96-2.94) was higher than in mild AD (RR, 1.82; 95% CI, 1.03-3.23) or moderate AD (RR, 1.51; 95% CI, 1.30-1.75). Early-onset AD had a slightly higher risk than late-onset AD. Boys demonstrated a higher risk, when compared to girls.

However, definition and criteria for AD and its phenotypes and asthma were not uniform in the included studies. Age of onset varied between 6 months to 2 years. Follow up time frame differed too. Severity of AD and its risk to develop asthma was showcased in only 3 publications. Phenotypes of AD associated with high risk of developing asthma were not discussed in detail.

Comments:

The atopic march alludes to the continuation journey, of atopic dermatitis (AD), leading to bronchial asthma and allergic rhinitis. Being the first step in the march, it is hence imperative to evaluate AD and identify the phenotypes that are associated with a high risk of progressing into asthma. As demonstrated in this study, children with early onset, persistent and severe AD are at a higher risk of developing asthma as compared to late onset, transient and mild or moderate AD.

Additionally, the risk is enhanced when AD is associated with multiple sensitizations especially increased IgE > 200 IU/ml, food allergens, and aeroallergens (Clin Exp Allergy 2018; 48(8):919-934).These findings need to be substantiated in the Indian settings. Appropriate emphasis on regular follow up and counselling about the natural course of the disease is imperative in such cases. As a patient, understanding other diseases and symptoms associated with AD can help with shared decision making, treatment planning and managing overall health and care.

As dermatologists, it is important to remember, early and aggressive treatment of early onset and or severe cases of AD will possibly help to avoid or delay the onset of the other subsets of the atopic march. Recent trials have suggested daily application of emollients as early as few weeks from birth may prevent early onset AD and possibly delay onset of atopic march (Clin Transl Allergy 2018;8:47). Multidisciplinary care centers to assist with a holistic patient care is a need. Where these are not available commonly, like in India, an individual may need to coordinate care between multiple healthcare providers to manage different diseases.

(Submitted by: Preeti K Sheth

Vyas HR, Shah SR, Shah BJ, Parmar KS, Jangid N, Choudhary A, Gehlawat T, Mistry D. A single-centre prospective study comparing efficacy and safety of apremilast with cyclosporine in moderate to severe atopic dermatitis. Australas J Dermatol. 2023

Apremilast regulates several pro-inflammatory signals involved in atopic dermatitis (AD). A randomized, single centre, open-labelled parallel-group study was conducted at a tertiary care centre in India. Fifty patients in the age group of 12-65 years with moderate to severe AD of > 1 year duration were randomly assigned in a 1:1 ratio to receive either apremilast (30 mg twice daily after initial titration) or cyclosporine (5 mg/kg/day) for 24 weeks, followed by a 12 week follow up period. Mean percentage change in EASI (standard deviation) was – 67.79% [22.44] in the Apremilast treatment group and -83.06% [21.20] in the cyclosporine group ($p < 0.05$). At week 24, 52.38% of patients in the Apremilast group and 78.26% in the cyclosporine group achieved EASI 75 (unpaired t-test, $p < 0.05$); 14.29% in the Apremilast group and 52.17% in the cyclosporine group achieved EASI 90 (unpaired t-test, $p < 0.05$) and 80.95% in the Apremilast group and 82.60% patients achieved ≥ 2 point reduction in Investigator's Global Assessment (IGA) (unpaired t-test, $p > 0.05$). 57.14% of patients achieved SCORAD 75 in the Apremilast group and 69.56% in the cyclosporine group (unpaired t-test, $p > 0.05$). Mean time to achieve EASI 75 in Apremilast group was 4.50 $\pm$ 4.62 weeks; while it was 3.96 $\pm$ 3.43 weeks in cyclosporine group (unpaired t-test, $p > 0.05$). Incidence of adverse effects was 28.57% in the Apremilast group and 21.74% in the cyclosporine group.

COMMENTS: Although Apremilast has the advantages of favourable safety profile and hence no laboratory monitoring, it is less efficacious as compared to cyclosporine. Apremilast can be considered as a treatment option in moderate AD where other immunosuppressive drugs are contraindicated.

(Submitted by : Jeta Buch)

Black line on the Nail

Authors: Resham Vasani

A thirteen-year-old girl presented to the pediatric dermatology outpatient department with complaints of an asymptomatic vertical black line on the left toe nail, noticed since the past 3 months. There was no prior trauma or any noticeable change in terms of thickness or intensity of pigment over time. She was otherwise healthy and not on any medications. The personal and family history was negative for malignant melanoma.

On examination there was a linear band of black pigment extending from the eponychium to the free edge of the nail plate [Figure 1].

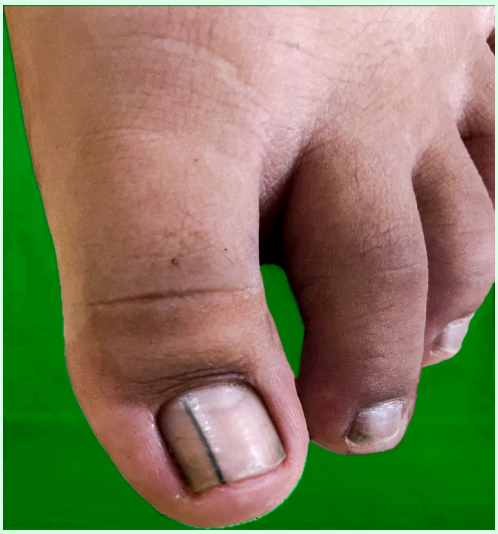


Figure1

There was no alteration of the nail plate architecture or surface. Dermoscopy showed homogenous linear pigmentation within the nail plate that was seen blending into the proximal end of the lunula [Figures 2a, b].

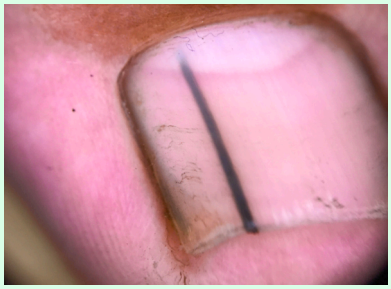


Figure 2a

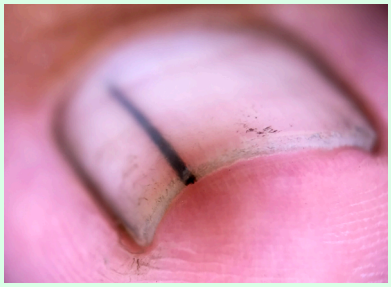


Figure 2b

Diagnosis of longitudinal melanonychia /melanonychia striata was made and the child was asked to follow up once every 6 months for examination and onychoscopy. She was asked to follow up earlier if any sudden change was noticed in the thickness/color/nail surface/periungual soft tissue.

Longitudnal melanonychia (LM) is a pigmented band on the nail plate that extends from the nail matrix to the distal edge.[1] LM in children occurs mostly because of a benign melanocytic nevus (beneath the proximal nail fold), lentigo or melanocyte activation which refers to increase in the melanin production from normal number of activated melanocytes in the nail matrix following trauma, infection or inflammation. Subungual melanoma is uncommon in this population.[2]

Onychoscopy showing brown-black background with brown-black parallel longitudinal lines of identical color, regular spacing and width point towards a benign melanocytic proliferation.[3] Table 1 outlines certain onychoscopic features that help to differentiate a melanocytic activation, benign melanocytic proliferation and a malignant melanocytic proliferation[4]. Box 1 enumerates the ABCDEF rule to distinguish alarming LM from non-alarming ones[5].

In children, though, irregularity of lines, width and spacing are not always indicative of melanoma[3]. So also, there are no established accurate onychoscopic criteria for the diagnosis of nail unit melanoma nor are there recommendations for frequency of follow up or deciding the time for biopsy.[4] Biopsy for diagnosis is a painful procedure and can give rise to a permanent deformity. Collection of suspicious onychoscopic features, changes in the lesion on follow up period, personal and family history of the patient will help making the best decision for biopsy and hence the decision should be taken on a case-by-case basis[6].

References

1. Burleigh A, Lam JM. Pediatric longitudinal melanonychia. CMAJ 2017;189(34):E1093.
2. Antonovich DD, Grin C, Grant-Kels JM. Childhood subungual melanoma in situ in diffuse nail melanosis beginning as expanding longitudinal melanonychia. Pediatr Dermatol 2005;22:210–2.
3. Ansari MS, Mahmoudi H, Sadeghinia A, Azizzadeh-Roodpishi S, Ghanadan A, Daneshpazhooh M. Dermoscopic Evaluation of Longitudinal Melanonychia in Children: A Prospective Study. Indian J Dermatol. 2021;66(4):445.
4. Singal A, Bisherwal K. Melanonychia: Etiology, Diagnosis, and Treatment. Indian Dermatol Online J. 2020;11(1):1-11.
5. Levit EK, Kagen MH, Scher RK, Grossman M, Altman E. The ABC rule for clinical detection of subungual melanoma. J Am Acad Dermatol. 2000;42:269–74.
6. Tosti A, Piraccini BM, de Farias DC. Dealing with melanonychia. Semin Cutan Med Surg. 2009;28:49–54

Table 1

Onychoscopic features of cause of melanonychia	
Cause	**Onychoscopic features**
Melanocytic activation	Multiple nails are involved, pale bands are seen Regular gray lines over a homogenous gray background
Benign melanocytic proliferation	Brown background with brown-black parallel longitudinal lines of identical color, regular spacing and width
Malignant melanocytic proliferation	Variegated brown background with longitudinal brown to black lines that are irregular in width, spacing and demonstrate loss of parallelism.

Box 1 - The ABCDEF

A (age, Afro-Americans, native Americans, and Asians): 5th and 7th decades

B (nail band): brown to black colour, ≥3 mm wide, irregular borders

C (change): rapid ↑ in size of band and/or change in morphology

D (digit involved): thumb > hallux > index

E (extension): Hutchinson's sign

F (family): Personal or familial history of nevi dysplastic syndrome and melanoma.

Upcoming Event

Pediatric Dermatology Foundation

In association with

Indira Gandhi Institute of Child Health

And

Bangalore Dermatological Society

Organizes for Postgraduate Students

'Masterclass in Pediatric Dermatology'

March 24th 2024

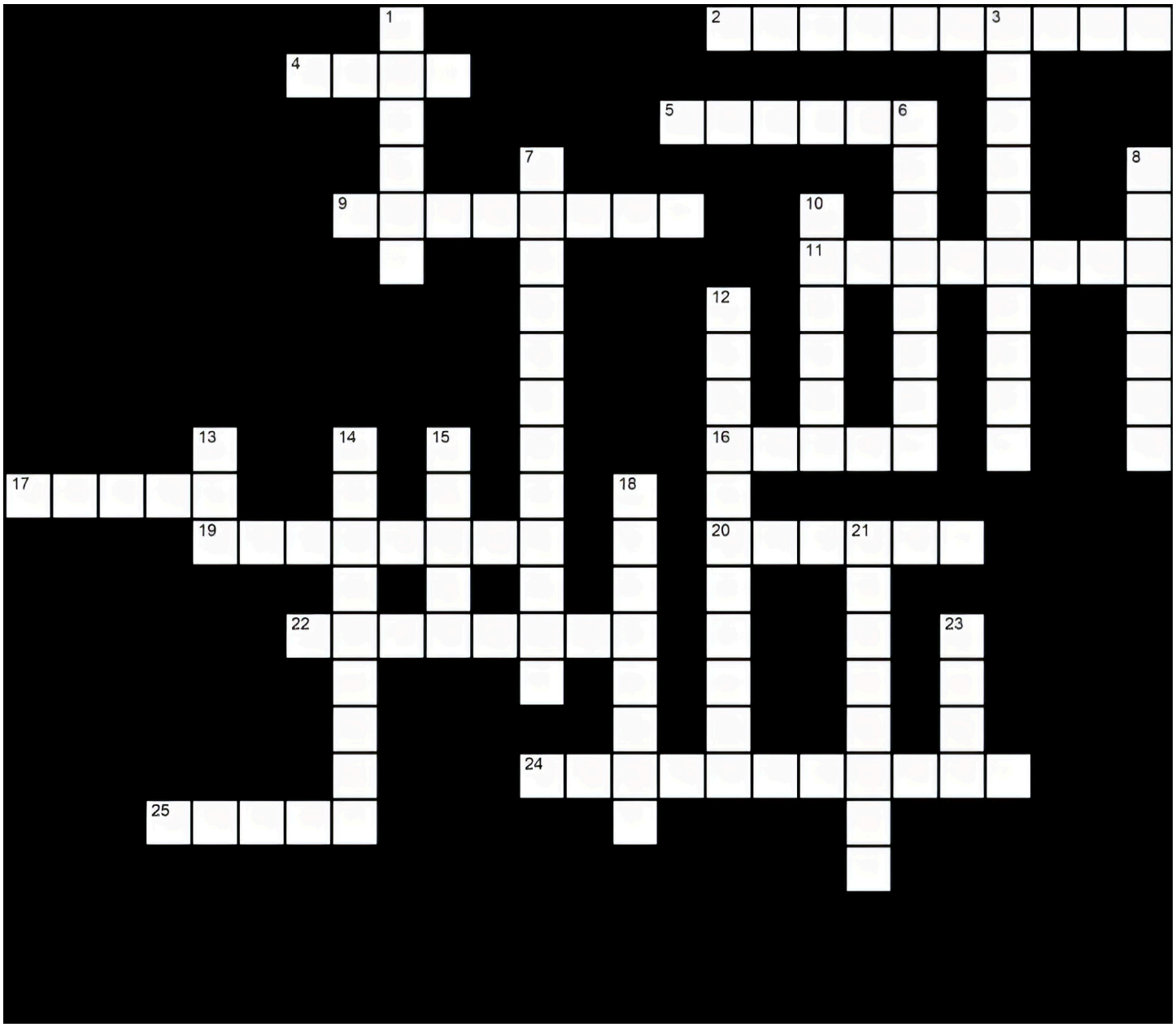
VENUE: INDIRA GANDHI INSTITUTE OF CHILD HEALTH, BENGALURU

For Registration form and Program Schedule
Visit www.peddermfoundation.org

CROSSWORD JIGSAW PUZZLE – 1

Author: Sahana Srihari

SIGNS in Dermatology



The first three correct answers will be provided a free complementary registration for the 'Pediatric Dermatology Updates' conference 2024, conducted at Bangalore. Kindly mail your answers to peddermfoundation@gmail.com before 10th March 2024.

ACROSS:

2- Dermatological sign where applying pressure on a neurofibroma causes it to easily sink into the dermis that sets them apart from intradermal nevi or dermatofibromas (10)

4- The dyschromia in this sign with hypopigmentation is attributed to a deficiency of a crucial component for melanin synthesis during alternating periods of malnutrition (4)

5- I reach you to touch your tip! A fascinating characteristic observed in patients with Ehlers-Danlos Syndrome (EDS), where an impressive 50% of them possess a unique ability (6)

9- A diagnostic indicator seen in children, this sign manifests as swollen eyelids, imparting a visual impression of heaviness or drowsiness. It proves particularly valuable in identifying a specific viral infection. Interestingly, this edema tends to vanish once the characteristic rash emerges. What is the concise term for this clinical clue? (8)

11- I smell great! But can cause a sign manifesting as primary dermatitis specifically at the Adam's apple, precisely where I am sprayed. What is the term that describes this? (8)

16- I am a hard structure formed for protection but used for enhancing beauty. In hepatic cirrhosis, my distal 1 to 2 mm has a normal pink colour, and the rest of me- a white appearance. What do they call me? (5)

17- A cutaneous manifestation involving facial and periorbital skin resembling a bear species endemic to China, associated with systemic amyloidosis. (5)

19- A disease due to bite of phlebotomine sandflies with the name derived from Hindi and Persian words manifests with acquired hypertrichosis of eyelashes. This sign is called? (8)

20- In young females having vitiligo, the primary white hue of vitiligo patches transforms into a vivid red-pink shade during menstruation. However, after menstruation, it reverts to its original colour. This sign is denoted as? (6)

22- I am the change in the shape of hard keratin which leads to Schamroth sign. I occur in various systemic disorders. Keep an eye on me. Who am I? (8)

24- Ability of hairs to bend, derived from a French word, named as a tribute to the Cardiff students. This sign is described in chemotherapy-induced alopecia. Name it. (11)

25- A peculiar phenomenon seen in an inherited disorder that affects connective tissue, where the distal phalange of the first and fifth fingers can overlap when they are wrapped around from the opposite side (5)

DOWN:

1- I am a cutaneous physical sign characterized by transient or persistent, blotchy, reddish blue to purple, net-like cyanotic pattern; observed in conjunction with both acute and chronic pancreatitis. Name me (6)

3- I am seen on the nails, I am a sign named after the British surgeon, pathologist, pioneer in the study of congenital syphilis. Who am I? (10)

7- A term used to describe the enlargement of the sternal end of the clavicle, particularly on the right side. This distinctive sign is often noticed in individuals who are affected by a condition that occurs in children who are two years of age or older and acquired the spirochaetal infection trans-placentally (12)

8- When you apply pressure on the skin by a pointed object (like a fingernail), there is formation of a pale line that rapidly transforms into a red hue. I am named as a sign, who am I? (7)

10- I may be an erythema, I may be a wheal, I may be a blister at times, you stroke me then you see me. I signify indolent presentations of an otherwise deadly disorder. Who am I? (6)

12- In KIDS SYNDROME, this may be the earliest sign, and the characteristic corneal vascularization and keratoconjunctivitis sicca leads to pannus formation and marked reduction in visual acuity (11)

13- Despite superficial sensory impairment, there is deep pain upon percussion of lesions over bone in tuberculoid leprosy. Name the sign (3)

14- I am a glaring clue to the underlying disturbance in aggregation of skin cells. Do not think I'm cute because I look red and pink, I may turn bad over the years. Avoid high beams (9)

15- 'Taste the thunder!. A sign describing protrusion of short, thick first digit of the human hand from the clenched fist beyond the ulnar border of hand. (5)

18- I am of the same shape but called differently in the western world and Southern India and consumed with different combinations. A sign named like me is seen in a sclerotic variant of lichen or papular mucinosis characterized by lichenoid papules and scleroderma-like features. (8)

21- I flow down, thick, and viscoid, if left untreated, I change the shape of my containing structure into a girthed usually padded and leather-covered seat for the rider of an animal. Name this manifestation of a disease beginning at and continuing since birth (8)

23- I LOVE CAMPING! In a localised mutation in a hair matrix cell, on stretching the overlying skin, the lesion calcifies and appears to be multifaceted and angulated, giving a characteristic appearance called _____sign (4)

Residents Column

A Journey Fuelled by Compassion: Choosing Pediatric Dermatology

Dr. Varsha. B. H, MD, FRGUHS (Pediatric Dermatology), Indira Gandhi Institute of Child Health, Bengaluru, Karnataka

In the final year of my dermatology residency, my aspirations were fixated on the transformative potential of Dermatosurgery and Cosmetology—fields I believed would sculpt a career dedicated to making an impact on patients' lives. Little did I know that a single encounter in the Pediatric ward would alter the trajectory of my professional journey.

Called for a referral, I walked to a 10-day-old child covered in blisters and wounds—a case of Generalized Epidermolysis Bullosa. As I struggled to explain the prognosis and management of this grave disease to the mother, uncertainty loomed, with a question mark in my mind as to how I would be more helpful to this child and her mother. This experience made me realise that not all dermatologists are adequately equipped to address the challenges presented by pediatric cases and thereafter grew an inclination towards pediatric dermatology, a realm distinct from general dermatology.

In response to this newfound calling, I embarked on a fellowship program at Indira Gandhi Institute of Child Health, Bengaluru, Karnataka, under the esteemed mentorship of Dr. Sahana M Srinivas, a decision that proved to be undeniably right for me. Learning under her guidance not only enhanced my knowledge but also instilled a profound sense of confidence in my abilities. I learned to approach a case with a calm and clear mind and realized the significance of detailed dermatological examination of a patient's condition.

Throughout my fellowship period, I encountered a spectrum of dermatoses, including infections, infestations, disorders of cornification, eczemas, autoimmune disorders, genodermatoses, and metabolic disorders. I delved into the intricacies of diagnosing and managing these conditions. The experience of witnessing children with eczema benefit from simple proactive approaches was highly rewarding, emphasizing the significance of early intervention. We actively counseled parents of children with genodermatoses on the importance of genetic testing and its benefits. Through genetic analysis, we confidently addressed the situation, offering insights into the potential impact on future generations. It was here that I witnessed the transformative impact we were making on a child's life.

Today, as I reflect on this journey, I stand at the intersection of compassion and specialization. Pediatric dermatology is not merely a profession for me; it is a calling to make a lasting difference in the lives of the most vulnerable patients. The road may be challenging, but the opportunity to bring solace to children and their families is a privilege I embrace wholeheartedly.

Passionate individuals interested in pediatric dermatology can pursue specialized training in various esteemed government and private institutes across the country. The candidates are selected based on oral interview or written test depending on the university. The fee structure for the program varies in accordance with the established norms of the respective universities or institutions. Participants are often offered stipends during this training period. Various institutions offering comprehensive programs in pediatric dermatology that I know are:

1. Indira Gandhi Institute of child health, Bengaluru, Karnataka
2. Bangalore Medical College and Research Institute, Bengaluru, Karnataka
3. St. John's Medical College, Bengaluru, Karnataka
4. CUTIS, Academy of cutaneous sciences, Bengaluru, Karnataka
5. BLDE Hospital and Research Centre, Vijayapura, Karnataka
6. Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry
7. Christian Medical College, Vellore, Tamil Nadu
8. IADVL also offers a paid four-week observership course in pediatric dermatology at CMC, Vellore, Tamil Nadu.

Fellowship program in Pediatric Dermatology is a one-year course. At the end of the academic year, post-doctoral fellowship examinations are administered, comprising theory and a practical examination. The theory examination encompasses two papers, collectively contributing to a total of 200 marks. To successfully pass this segment, candidates must achieve a minimum of 50%. During the practical assessment, students undergo evaluation by both internal and external examiners. This comprehensive evaluation involves each student presenting a long case and participating in discussions on two short cases, followed by a viva examination covering general pediatric dermatology topics, pharmaceuticals, instruments, histopathology slides and spotter discussions.

I was drawn to pediatric dermatology because of my commitment to focusing on medical necessity rather than elective procedures. To newly graduated MD/DVL postgraduates, I recommend considering this field if you share a similar mindset. Pediatric dermatology presents a diverse range of cases, from common skin conditions to rare disorders, keeping the work interesting and intellectually stimulating for those who enjoy diagnostic challenges. Ultimately, the choice of specialization should align with your values, priorities, and the kind of impact you wish to make in your medical career. While financial considerations are undoubtedly important, I find that the intrinsic rewards and personal fulfillment derived from working in this field outweigh potential financial differences.

Drug Dosing in Children: Tips and tricks- Antihistamines

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Antihistamines are one of the most commonly prescribed medications in dermatological practice. Pediatric disorders like urticaria, atopic dermatitis, insect bite reactions, scabies and mastocytosis all present with varying severity of pruritus.[1]Pharmacokinetic differences between children and adults make blanket approach of antihistamine administration dangerous without due diligence.[1] Cytochrome P (CYP) dependent metabolism, although is around 50% of that of adult levels, exceeds it by 2-3 years of life. By puberty, the enzymatic activity decreases to meet the levels as seen in adults.[2] Pharmacological effects and therapeutic applications are similar in both first and second generation antihistamines, but second-generation drugs have fewer adverse effects because they are more selective to peripheral histamine receptors.[2] Commonly prescribed antihistamines and their dosages are tabulated below.[1,4]

Table: Commonly used antihistamines, their licensed age of use, dosages and formulations[1,4]

First generation antihistamines

Pediatric use of first generation antihistamines is primarily extrapolated from data in adolescents and adults. But this inference cannot be done for children <2 years of age due to the absence of specific efficacy studies, effect on children's scholastic performance and possible anti-cholinergic effects; Hence they are avoided in ages <2 years.[1] Drowsiness, paradoxical stimulation might occur in higher doses.[3]

Drug (Licensed age)	Dosage	Formulation
Hydroxyzine (approved for ≥2 years of age)	1-2mg/kg/day Due to drowsiness, 0.5-1mg/kg/day is preferred depending on the severity of pruritus	Tablet: 5mg, 10mg, 25mg Syrup: 10mg/5ml Drops: 6mg/ml

Second generation antihistamines

They are relatively safe, non-sedating and their safety profile in pediatric population well known. Terfenadine and astemizole have long been discontinued, but other newer antihistamines have undergone rigorous testing to assure their safety in pediatric population.[1]

Drug (Licensed age)	Dosage	Formulation
Levocetrizine (approved for ≥6 months)	6 months-5 years: 1.25 mg/day 6-11 years: 2.5 mg/day (do not exceed this dose) ≥12 years: 5 mg/day	Tablet: 5mg Syrup: 2.5mg/5ml
Fexofenadine (approved for ≥ 6 months)	6 months-2 years: 15 mg twice daily 2-12 years: 30 mg twice daily ≥12 years: 60 mg twice daily or 180 mg/day	Tablet: 120mg, 180mg Suspension: 30mg/5ml
Loratadine (approved for ≥ 2 years)	2-5 years: 5 mg/day ≥6 years: 10 mg/day	Tablet: 5mg, 10mg Oral solution: 5mg/5ml
Desloratadine (approved for ≥ 6 months)	6-11 months: 1 mg/day 1-5 years: 1.25 mg /day 6-11 years: 2.5 mg/day ≥12 years: 5 mg/day	Tablet 5mg, 10mg

Tips and tricks:[1,3]

- Parents tend to mix syrup formulation with different juices to make the drug more palatable. Hydroxyzine, loratadine and fexofenadine are avoided with grapefruit juice. Additionally, orange and apple juice are also avoided when given with fexofenadine. Parents should be counseled accordingly.
  - -Co-administration with grapefruit inhibits hydroxyzine metabolism through cytochrome P (CYP) dependent metabolism, which could lead to increased plasma concentrations of hydroxyzine.[5]
  - -Grapefruit, apple and orange juices significantly decreased the fexofenadine concentrations in plasma by inhibiting organic anion transporting polypeptide.[6]

  Children friendly formulations and flavoring agents have made administration of antihistamines in pediatric population very easy. Hydroxyzine and fexofenadine are available in such flavored formulations.
- Most second generation anti-histamines can be taken without regard to food consumption. Exceptions to the rule are loratadine and fexofenadine. Food increases the systemic bioavailability of loratadine. Fexofenadine is best given before a meal.
- Availability of over the counter pediatric friendly formulations of first generation anti-histamines has led to its consistent use in young pediatric population hence dosage regulation is important to bear in mind.
- Itch in atopic dermatitis is predominantly non histaminergic. However, the sedating effects can be effective to correct sleep disturbance encountered in atopic dermatitis.
- Second generation antihistamines are preferred in cutaneous mastocytosis and urticaria due to their anti-inflammatory and mast cell stabilizing properties.

References:

1. Kohli S, Tayal R, Goyal T. Antihistamines in children: A dermatological perspective. Indian J Paediatr Dermatol 2022;23:8-23.
2. Anderson GD. Children versus adults: pharmacokinetic and adverse-effect differences. Epilepsia. 2002;43 Suppl 3:53-9.
3. Fitzsimons R, van-der Poel LA, Thornhill W, du Toit G, Shah N, Brough HA. Antihistamine use in children. Arch Dis Child Educ Pract Ed. 2015;100(3):122-31.
4. Parisi GF, Licari A, Papale M, et al. Antihistamines: ABC for the pediatricians. Pediatr Allergy Immunol. 2020;31 (Suppl 24):34–6.
5. National Center for Biotechnology Information (2023). PubChem Compound Summary for CID 3658, Hydroxyzine. Retrieved December 25, 2023 from https://pubchem.ncbi.nlm.nih.gov/compound/Hydroxyzine.
6. Dresser GK, Bailey DG, Leake BF, Schwarz UI, Dawson PA, Freeman DJ et al. Fruit juices inhibit organic anion transporting polypeptide-mediated drug uptake to decrease the oral availability of fexofenadine. Clin Pharmacol Ther. 2002;71(1):11-20.