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A Clinico-Epidemiological Study of Hypopigmented Skin Lesions in Pediatric Age Group

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ABSTRACT

In the pediatric age range, pigmentary diseases are thought to be the most prevalent category of dermatoses. Lesions that are hypopigmented in youngsters are quite prevalent. To know the clinical characteristics of hypopigmented lesions in pediatric age group. The present study was a Descriptive Observational study. This Study was conducted from April 2019-March 2020 at Burdwan Medical College and Hospital. Total 300 patients were included in this study. Pityriasis alba accounted for the majority of cases in this study with 114 cases (38%), followed by vitiligo in 58 cases (19.33%), post-inflammatory hypopigmentation in 63 cases (21%), primary disorders of hypopigmentation in 21 cases (7%), pityriasis versicolor in 26 cases (8.66%), Hansen's disease in 12 cases (4%) and other conditions in 6 cases (2%). Faces accounted for 183 instances (61%), with the most frequent afflicted place being the legs (17.33%), hands (17%), back (17%), total body (22 cases (7.33%), chest (19 cases 6.33%), abdomen (18 cases 6%) but tocks (2%) and genitalia (3 cases 1%). Numerous ancient religious texts have described hypopigmentation as a contagious sickness or a curse. Because hypopigmented skin lesions are socially stigmatized, parents of afflicted children may have significant psychological effects from their child's pigment loss. According to the findings of our study, pityriasis alba is the most common hypopigmentary disorder. Post-inflammatory hypopigmentation, vitiligo, pityriasis versicolor, primary disorder of hypopigmentation, Hansen disease and other conditions are the other causes of hypopigmentary and depigmentary disorders, listed in decreasing order.

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Key Words
Hypopigmented skin lesions, pediatric dermatology, vitiligo epidemiology

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INTRODUCTION

In the pediatric age range, pigmentary diseases are thought to be the most prevalent category of dermatoses. Lesions that are hypopigmented in youngsters are quite prevalent.

Numerous ancient religious texts have described hypopigmentation as a contagious sickness or a curse. The parents of the afflicted kid may have significant psychological effects from their child's pigment loss. Children's hypopigmented lesions can range in severity from ambiguous leprosy to benign conditions like pityriasis alba and versicolor. Nevus anemicus, post-inflammatory depigmentation, polymorphic light eruption, vitiligo, nevus depigmentosus, idiopathic guttate hypomelanosis and other conditions are among the various reasons.

The colour of the skin is mainly due to melanin and blood but can be altered in non-physiological conditions such as carotenemia, drug intake, jaundice and chronic renal failure. Hypopigmentation refers to any form of decreased pigmentation, whereas hypomelanosis refers specifically to a decrease in melanin content. Depigmentation, in contrast to hypopigmentation, describes the almost total loss of pigmentation, resulting in a whitish appearance that comes from the underlying dermis.

Wide variety of illnesses fall under the umbrella of cutaneous hypopigmentation, which may be classified according to age of start (congenital or acquired) and degree of involvement (diffuse or localized). Hypopigmentary diseases in children provide a number of diagnostic problems. First of all, patients, parents and physicians may find it challenging to identify the anomalies if they manifest as asymptomatic, minor clinical changes. Second, a histological examination of the lesion is seldom diagnostic and the differential diagnosis range is wide. Thirdly, there are several conditions that typically present with inflammatory component but sometimes present with hypopigmented lesions. Fourthly, it could occur as a primary disorder or be associated with various medical conditons. Although, the vast majority of hypopigmentation encountered in the modern world is neither contagious nor dangerous, fear, anxiety and uncertainty continue to surround this problem for patient and physician alike. Even if these conditions cannot be cured, simple understanding may provide some relief. The aim of my study is to evaluate the various causes of hypopigmented lesions in pediatric age group.

MATERIALS AND METHODS

Pediatric patients presenting with one or more hypopigmented lesions to Outpatient department of dept. Dermatology, Burdwan Medical College and Hospital in between April 2019 to March 2020 were considered under this study.

Study location: Department of Dermatology, Burdwan Medical College and Hospital, Burdwan.

Study population: All Pediatric patients attending dermatology with hypopigmented skin lesion, fulfilling the inclusion and exclusion criteria.

Study period: April 2019-March 2020

Sample size: All pediatric Patients attending skin OPD of Burdwan Medical College and Hospital with hypopigmented skin lesions during the aforesaid study period.

Sample design: Sample will be designed according to convenient sample (300 Cases).

Inclusion criteria: Pediatric (Newborn to 18 years) patients 67 attending skin OPD of Burdwan Medical College and Hospital with hypopigmented skin lesions during the aforesaid study period.

Exclusion criteria: Where patient's parents refuses to give consent Terminally ill patients

Study design: Descriptive Observational study.

Study technique: It's a hospital based observational descriptive study. All the newly registered patients in pediatric age group satisfying the inclusion and exclusion criteria within the previously mentioned time period will be taken for study. First of all we will take valid consent from patient after discussing about the study, procedures and will motivate the patient to come for review in subsequent visits, where necessary. For each case, we will fill the proforma which includes name, age, sex, other demographic parameters, detailed history, general survey, detailed general and dermatological examinations and provisional diagnosis. Photograph will be taken in all cases. Most of the data will be taken on the first day visit but when necessary patient will be followed up in subsequent visits. For any difficulty I will consult my Guide and other teachers of the department for that study. Biopsy, skin smear, wood lamp examination, KOH preparations were made if necessary. After collection of all data, there will be analysis of data by different statistical method and the result will be presented by different chart and diagrams.

RESULTS

Pityriasis alba accounted for the majority of cases in this study with 114 cases (38%), followed by vitiligo in 58 cases (19.33%), post-inflammatory hypopigmentation in 63 cases (21%), primary disorders of hypopigmentation in 21 cases (7%), pityriasis

Table 1: Diagnosis and sex wise distribution cases

	Male		Female		Total	
Diagnosis	Number	%	Number	%	Number	%
Pityriasis alba	60	20.00	54	18.00	114	38.00
Vitiigo	24	8.00	34	11.33	58	19.33
Post inflammatory hypopig	30	10.00	33	11.00	63	21.00
Pityriasis versicolor	17	5.00	9	4.00	26	8.66
Hansen disease	10	3.33	2	0.66	12	4.00
Primary hypopigmentation	11	3.66	10	3.33	21	7.00
Miscellaneous	5	1.66	1	0.33	6	2.00
Total	157	51.65	143	48.65	300	100.00

versicolor in 26 cases (8.66%), Hansen's disease in 12 cases (4%) and other conditions in 6 cases (2%). Face was the most common affected site seen in 183 cases (61%), followed by legs in 52 cases (17.33%) and hands in 51 cases (17%), back in 27 cases (9%), whole body in 22 cases (7.33%), chest in 19 cases (6.33%), abdomen in 18 cases (6%) but tocks in 6 cases (2%) and genitalia in 3 cases (1%). The most common symptom was itching seen in 26 cases (8.67%), followed by photosensitivity in 22 cases (7.34%), redness in 16 cases (5.33%) and loss of sensations in 10 cases (3.33%). In this study, 123 cases (41 %) presented with less than 3 months history of duration, followed by 58 cases (19.33%) with 13-16 months duration and 53 cases (17.33%) with 4-6 month duration. The mean duration of disorders was 1.70 years. 72 cases of pityriasis alba had duration less than 6 months. Majority of cases of pityriasis versicolor were male-17 cases (65.38%), followed by 9 female cases (34.61%). Nine cases (34.61%) had the face as the most often afflicted single site. Nine instances (four at the upper back and three at the legs) and one (3.8%) involved the abdomen were the next most prevalent multiple site cases. The age range of 8-18 years accounted for 69.23% of cases, followed by 1-7 years (269.92%) and less than a year (3.8%). Most common association anemia seen in 24 cases (8%-14 cases were seen in pityriasis alba), followed by 7 cases (2.33%) of seizures (4 cases of hypomelanosis of Ito and 2 case of Tuberous sclerosis complex), 4 cases (1.33%) of mental retardation (2 cases of dyschromatosus universalis hereditaria, 1 case of Hansen's disease, 1 case of Down's syndrome), 10 cases (3.33%) with history of atopy were seen (Table 1-3 and Fig. 1-2).

Table 2: Gender wise, site wise, age wise distribution of pityriasis versicolor

Parameter	Number	%
Gender		
Male	17	65.38
Female	9	34.61
Body part		
Face	9	34.61
Upperback	4	15.38
Legs	3	11.50
Abdomen	1	3.80
Multiple sites	9	34.61
Age		
<1 year	1	3.80
1-7 year	7	26.92
8-18 year	18	69.23

Table 3: Symptom wise distribution of cases and systemic associations

Parameters	Number	%
Presenting complaints		
Redness	16	5.33
Itching	26	8.60
Photosensitivity	22	7.33
Loss of sensations	10	3.33
Condition		
Anemia	24	8.00
Hypothyroidism	1	0.33
Mental retardation	4	1.33
Siezures	7	2.33
Atopy	10	10.00

DISCUSSION

In our study, the most common hypopigmentary disorders were pityriasis alba, postinflammatory hypopigmentation, vitiligo, pityriasis versicolor and leprosy Pinto and Bolognia reported that vitiligo, nevus depigmentosus, tinea versicolor and pityriasis alba were the most frequent illnesses causing hypopigmentation in children. Since leprosy is endemic in India, it is one of the most common causes of hypopigmentation in that country.

In the study by Sori *et al*.[1] children below the age group of 14 years have been considered. In our study, we have included pediatric cases upto the age group of 18 years as per Nelson. In this cross sectional study which included 300 patients, 47.66% patients were females and 52.33% were males. The ratio of males to females was 1.09: 1.

In our study, the most common disorder was pityriasis alba, seen in 38%, followed by post inflammatory hypopigmentation in 21 %, vitiligo in 19.33%, pityriasis versicolor in 8.66%, primary disorders of hypopigmentation in 7%, Hansen's disease in 4% and miscellaneous conditions in 2% of the cases.

Nevus depigmentosus (2.66%) and hypomelanosis of Ito (5.66%) were the most frequent primary disorders of hypopigmentation. Other cases included dyschromatosus universalis hereditaria, tuberous sclerosis complex and halo nevus (2 cases each of 0.66%), piebaldism (0.33%) and nevus anemicus (0.33%). The other disorders were 0.67% steroid-induced hypopigmentation, 0.67% pityriasis lichenoides chronicus and 0.33% of idiopathic guttate hypomelanosis, lichen sclerosus and atrophicus.

Pityriasis alba (24.7%) was the most common hypopigmentary disorder, followed by vitiligo (20.4%), leprosy (11.5%), nevus depigmentosus (10.18%) and tinea versicolor (6.2%); other conditions included

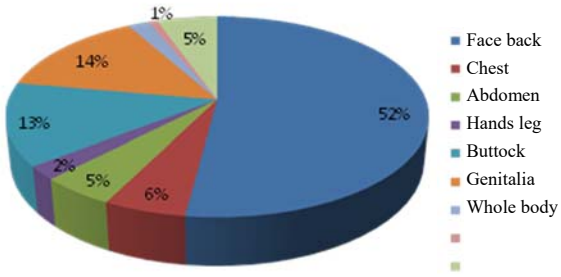

Fig. 1: Showing itewise distribution of cases

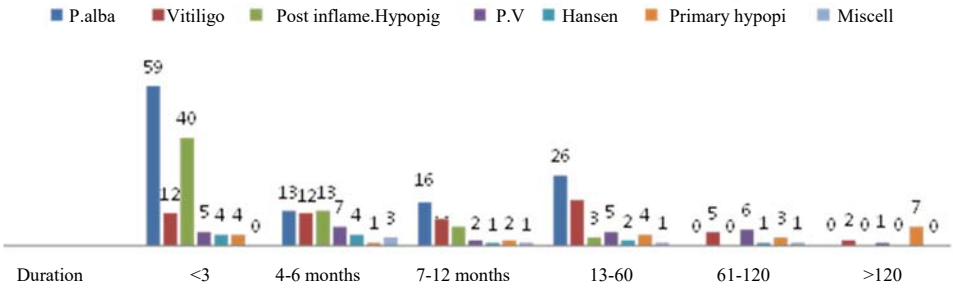

Fig. 2: Showing Duration wise distribution of cases

steroid-induced hypopigmentation (3.54%), pityriasis rosea (3.54%), lichen sclerosus et atrophicus (2.65%), pityriasis lichenoides chronica (2.65%), lichen striatus (1.77%), oculocutaneous albinism (1.77%), tuberous sclerosis complex (1.77%), pigmentary mosaicism (0.88%) and Griscelli syndrome (0.88%)[1].

According to Soni *et al*.[1] the most common disorder was Pityriasis alba, seen in 27.33%, followed by Pityriasis versicolor in 21%, Vitiligo 19.33%, Post inflammatory hypopigmentation in 14%, Primary disorders of hypopigmentation in 13%, Hansen's disease in 1.33% and miscellaneous conditions in 4% of the cases[1].

The most common hypopigmentation condition in our study is pityriasis alba , this finding is similar to Sori *et al*.[1] study and Soni *et al*.[2] but there is difference in further order of hypopigmented skin lesions, when compared to both the above said studies.

The most frequently afflicted place in our analysis was the face, which accounted for 64% of cases. Legs came in at 17.33%, hands at 16.33%, back at 6.66%, entire body at 6.66%, chest at 6%, belly at 2.6% but tocks at 2.33% and genitalia at 1%. Sori *et al*.[1] report that the face accounted for 28.6% of all afflicted children, with widespread involvement occurring in 2.65% of cases. Other commonly affected sites were the upper limb (11.8%), lower limb (11.3%), chest (10.3%), back and belly (9.2%). Our study's most often impacted location was the face, which is consistent with studies by Sori *et al*.[1] and Soni *et al*.[2].

In this study, 69.23% of cases were in the age group 8-18 years, 3.8% of cases were seen in infants. Face was the most common site affected in 34.61%, multiple site involving sites of face, chest, upper back and upper arms was seen in 34.61% of cases.

In Jena *et al*.[3] study of pityriasis versicolor in 271 children, majority of children were aged 8-12 years (31.7%) but 10 infants were also affected. Face was the most affected site (39%) and extensive involvement was seen in 45 (16.6%) children with lesions on the back and shoulder.

In Kolkata, Ghosh *et al*.[4] carried out an epidemiological and clinicomycological investigation on pityriasis versicolor. The chest, face and back were the most frequently affected areas and the majority of the lesions were hypopigmented scaly macules. Segmental, localized, acrofacial and mucosal vitiligo were the next most prevalent types[5].

Similar to Jena *et al*.[3] the majority of pityriasis versicolor patients were seen after the age of eight years. Pityriasis versicolor most commonly affects the face, as shown by studies by Jena *et al*.[3] and Ghosh *et al*.[4] Twenty-four cases (8%) had pityriasis alba, of which fourteen cases had anemia. Seven cases (2.33%) had seizures (five cases of hypomelanosis of Ito and two cases of Tuberous Sclerosis Complex); four cases (1.33%) had mental retardation (two cases of dyschromatosus universalis hereditaria, one case of Hansen's disease and one case of Down's syndrome); ten cases (3.33%) had a history of atopy. 1.3% of children with vitiligo have an autoimmune

association, according to Handa and Dogra[1] and Mazereew-Hautier *et al*.[7] have reported association of thyroid function abnormalities without clinical disease in 11.23% of children with non segmental vitiligo but none in segmental vitiligo.

Sori *et al*.[1] have reported a case of pityriasis alba with chronic suppurative otitis media and upper respiratory tract infections, oculocutaneous albinism with atrial septal defect and nystagmus, 1 case of post inflammatory hypopigmentation (psoriasis) with dental caries; 2 cases of post inflammatory hypopigmentation (psoriasis) with enlarged tonsils; 1 case each of tuberous sclerosis complex and vitiligo had seizures, 1 case of nevus depigmentosus had microcephalus, 1 case of hypomelanosis of Ito had ambylopia.

According to this study, the BT type of Hansen's disease accounted for 66.66% of cases. BL type came in second with 16.66% of cases and LL and TT types with 8.26% of cases apiece. A family history of Hansen disease is seen in 58.33% of cases.

Singal *et al*.[8] state that BT leprosy was the most prevalent form, affecting 70•3% of patients. The other clinical categories were TT (5•8%), BB (1•2), BL (9•9%) and LL (4•1%). Four percent of patients had uncertain forms and four percent of PNL patients, respectively.

CONCLUSION

Hypopigmentation has been referenced in many ancient religious texts as a curse or contagious disease. Loss of pigment can have a profound psychological impact on the parents of the affected child which is primarily due to the social stigma associated with hypopigmented skin lesions. Our study concludes by stating that the most common hypopigmentary disorders are seen is pityriasis alba and other causes of hypopigmentary and depigmentary disorders in decreasing order are post inflammatory hypopigmentation, vitiligo, pityriasis versicolor, primary disorder of hypopigmentation, Hansen disease and miscellaneous conditions. Our study provides important clinical data but further studies with large number of cases can be done. Management of hypopigmented skin lesions, varies from reassurance in conditions like nevus depigmentosus to MDT in leprosy patient. Counseling is very important part of treatment to overcome the immense mental stress associated with it.

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