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Original Research Article

Clinico-Epidemiological Profile of Vitiligo among Children: A Prospective Study from Tertiary Care Hospital of Central India

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Abstract:

Background: Due to the loss of functioning melanocytes, vitiligo is a frequent acquired skin condition characterized by depigmented macules and patches. The stigma attached to vitiligo causes patients and their families to worry about how it may affect their appearance, which is one of the most significant features of the disease.In order to better understand the clinical pattern and systemic associations of childhood vitiligo in the central region of India, this study was conducted.

Methods: The study included all vitiligo patients under the age of 18 who visited the Dermatology OPD of a tertiary care hospital between February 2021 and January 2022. The clinical characteristics of the patients were recorded in a predesigned proforma after obtaining the parents' informed consent. The data that was collected was entered into an MS Excel spreadsheet. Frequency, percentage, and descriptive statistics such as mean and SD were used to present the data.

Results: In our study, a total of 3643 pediatric patients attended the skin OPD during the defined study period and out of them 71 pediatric patients were diagnosed as having vitiligo. So, in our study the prevalence of vitiligo was 1.9%.The female patients (60.6%) were suffering more from vitiligo as compared to males (39.4%). The most common pattern of vitiligo was vulgaris (46.5%) followed by focal (35.2%) and mucosal (8.5%). The acrofacial and segmental pattern of vitiligo was seen in 5.6% and 4.2% of patients respectively.

Conclusion: With an average onset age of 5 to 10 years, childhood vitiligo is a prevalent depigmenting disorder that affects more females than males, likely as a result of more worry over the disfiguring appearance of the disease in females.

Keywords: Vitiligo, Melanocyte, Incidence, childhood, Repigmentation.

Introduction

Due to the loss of functioning melanocytes, vitiligo is a frequent acquired skin condition characterized by depigmented macules and patches.The stigma attached to vitiligo causes patients and their families to worry about how it may affect their appearance, which is one of the most significant features of the disease. When compared to late-onset illness, vitiligo that develops during childhood exhibits significant epidemiological and clinical traits. Vitiligo starts in 25% of cases before the age of 10, and in 50% of cases before the age of 20, according to statistics. Its prevalence ranges from 0.1-2% globally and 0.5-2.5% in India.[1,2,3] Only rarely does childhood vitiligo develop or recur, with the majority

of cases being stable or regressive. Rarely does a person completely spontaneously repigment. However, compared to adults, children are more prone to spontaneous repigmentation, particularly in tropical regions and throughout the summer.[4,5,6,7]It has been observed that studies on childhood vitiligo are uncommon in this region of the nation. Therefore, an in-depth clinical examination will help dermatologists in better understanding this disease profile in children in this region of the country and in providing appropriate management. In order to better understand the clinical pattern and systemic associations of childhood vitiligo in the central region of India, this study was conducted.

Materials and Methods

After receiving institutional ethical committee approval, the prospective, observational study was conducted over the course of a year. The study included all vitiligo patients under the age of 18 who visited the Dermatology OPD of a tertiary care hospital between February 2021 and January 2022. The first 100 patients who were under the age of 18 were included in the study.

The clinical characteristics of the patients were recorded in a predesigned proforma after obtaining the parents' informed consent. Details such as age, sex, family history, duration of illnesses, history of Koebner's phenomena, and history of associated diseases were all noted. The patients underwent a complete examination, and information regarding the sites of involvement, vitiligo pattern, halo nevus, and leukotrichia were recorded. According to the VIDA rating method, vitiligo was evaluated. The VIDA is a six-point scale used to rate the severity of vitiligo. It is based on the patient's perception of the severity of the illness. Less activity is indicated by a low VIDA score. Expanding lesions or the appearance of new lesions are both characteristics of active vitiligo. The following grading scale is used:+4 (Active past ≤6 weeks); +3 (Active past 6 weeks to 3 months); +2 (Active past 3 - 6 months); +1 (Active past 6 - 12 months); 0 (Stable for ≥1 year); and -1 (Stable with spontaneous re-pigmentation since ≥1 year).[9]The data that was collected was entered into an MS Excel spreadsheet. Frequency, percentage, and descriptive statistics such as mean and SD were used to present the data.

Results

In our study, a total of 3643 pediatric patients attended the skin OPD during the defined study period and out of them 71 pediatric patients were diagnosed as having vitiligo.

So, in our study the prevalence of vitiligo was 1.9%. The common age group for vitiligo was 5-10 years (56.3%) followed by 11-17 years (33.8%). The female patients (60.6%) were suffering more from vitiligo as compared to males (39.4%). Most of vitiligo patients were residing in the urban area (62.0%) and were having Hindu by religion (67.6%)(Table1).

Table 1: Sociodemographic characteristics of the patients

Variables	Number	%
Age		
<5 years	7	9.9
5-10 years	40	56.3
>10 years	24	33.8
Gender		
Male	28	39.4
Female	43	60.6
Residence		

Urban	44	62.0
Rural	27	38.0
Religion		
Hindus	48	67.6
Muslim	9	12.7
Christian	9	12.7
Others	5	7.0
Socioeconomic status		
Upper	11	15.5
Middle	47	66.2
Lower	13	18.3

In our study, the most common age group for the onset of disease was 5-10 years (78.9%) and among 15.5% the age of onset of disease was <5 years.

No triggering or precipitating factors were found in 71.8% of patients, whereas among 16.9% of patients the trauma was the most common trigger or precipitating factor. No family history of vitiligo was noticed among 81.7% of patients and among those who had family history, presence of vitiligo among 1st degree family members was seen among 11.3% of patients (Table 2).

Table 2: Risk factors characteristics for the vitiligo among patients

Variables	Number	%
Age at onset of disease		
<5 years	11	15.5
5-10 years	56	78.9
>10 years	4	5.6
Duration of disease		
<5 years	55	77.5
≥5 years	16	22.5
Triggering/precipitating factor		
None	51	71.8
Trauma	12	16.9
Chemical	3	4.2
Footwear	4	5.6
Emotional stress	1	1.4
Family history		
Absent	58	81.7
Present	13	18.3
1st degree	8	11.3
2nd degree	4	5.6
3rd degree	1	1.4

Among all patients the <5% of BSA was involved during the time of presentation of vitiligo and <20% of BSA was involved in 69.0% of patients. Lower limb was the most common site involved in the vitiligo followed by face (25.4%) and upper limb (14.1%). The most common pattern of vitiligo was vulgaris (46.5%) followed by focal (35.2%) and mucosal (8.5%). The acrofacial and segmental pattern of vitiligo was seen in 5.6% and 4.2% of patients respectively. The associated features with vitiligo were leucotrichia (23.9%), Koebner's phenomenon (18.3%), atopic

dermatitis (14.1%). The associated features with vitiligo such as halo nevi and alopecia areata of vitiligo was seen in 4.2% and 1.4% of patients respectively. The associated conditions with the vitiligo were photosensitivity (9.9%), ocular such as refractive errors, eyelid vitiligo and iris depigmentation (8.5%), hypothyroidism (4.2%) and auditory (1.4%). In our study, vitiligo activity was assessed according to VIDA scoring system and it was found that vitiligo was progressive in 59.2% of patients and stable in remaining 40.8% of patients (Table 3).

Table 3: Vitiligo characteristics among the patients

Variables	Number	%
Body surface area (BSA) involvement		
<5%	71	100.0
<20%	49	69.0
Site of disease		
Lower limb	30	42.3
Face	18	25.4
Upper limb	10	14.1
Mucosa	9	12.7
Scalp	4	5.6
Pattern of disease		
Vulgaris	33	46.5
Focal	25	35.2
Mucosal	6	8.5
Acrofacial	4	5.6
Segmental	3	4.2
Associated features		
Leucotrichia	17	23.9
Koebner's phenomenon	13	18.3
Atopic dermatitis	10	14.1
Halo nevi	3	4.2
Alopecia areata	1	1.4
Associated conditions		
Photosensitivity	7	9.9
Ocular	6	8.5
Hypothyroidism	3	4.2
Auditory	1	1.4
Activity		
Progressive	42	59.2
Stable	29	40.8

Discussion

Lacking any epidermal alterations, vitiligo is characterised by milky-white coloured or depigmented macules of varying shapes and sizes, with or without leucotrichia. The most prevalent depigmentary condition, it has social and psychological components. It is thought that vitiligo has a complex origin, while the exact cause is yet unknown. The etiopathogenesis of different clinical kinds of vitiligo is explained by a number of theories.[4,9]

In our study, vitiligo vulgaris (46.5%) was the most prevalent pattern, followed by localised (35.2%) and mucosal (8.5%). 5.6% and 4.2% of patients, respectively,

had the segmental pattern of vitiligo and the acrofacial pattern. Numerous studies have found that vitiligo vulgaris is the most prevalent kind, followed by focal and then segmental vitiligo.[3,4,10] The most typical area affected by vitiligo was the lower limb, which was followed by the face (25.4%) and upper limb (14.1%). The research conducted by Jain et al., Hafi et al., Puri et al., and Gupta et al., was in agreement with this.[1,9,11,12]In our study, the age group with the highest prevalence of disease onset was 5-10 years (78.9%), and among 15.5% of participants, the age of disease onset was <5 years. Various Indian studies found that the mean onset age was 7.85 years, 6.64 years, 8.92 years, and 5 years, respectively.[1,10,13,14] Studies from China, Kuwait, and Korea showed similar findings, with the mean age of disease onset being between 8 and 12 years.[3,15,16]

Compared to males (39.4%), patients with vitiligo affected 60.6% more females. Most studies indicate a predominance of women.[1,10,14] The northern and southern Indian subcontinents, have higher female incidence rates of 57.1% and 61.1%, according to studies respectively.[10] This can be because parents are more worried about the depigmented patch on a girl kid than a boy because vitiligo has a social stigma in society.

81.7% of patients had no known family history of vitiligo, whereas 11.3% of patients with known family history had vitiligo in members of their first-degree family members. The research was comparable to that of Jain et al., (17.5%), Handa et al., (12%), and Hafi et al., (12%).[1,5,9].

Leucotrichia (23.9%), Koebner's phenomenon (18.3%), and atopic dermatitis (14.1%) were the characteristics associated with vitiligo. Halo nevi and alopecia areata of vitiligo were observed in 4.2% and 1.4% of individuals, respectively, associated with vitiligo characteristics. Similar to our findings, atopic dermatitis (13%) was also frequently observed in a study conducted by Sheth et al.[10] Leukotrichia, whose incidence ranges from 3.7% to 32.5%, is a frequent vitiligo presentation.[12]

Conclusion

With an average onset age of 5 to 10 years, childhood vitiligo is a prevalent depigmenting disorder that affects more females than males, likely as a result of more worry over the disfiguring appearance of the disease in females. The most frequent form of vitiligo presentation was vitiligo vulgaris, followed by the focal type, while the universal pattern was uncommon in children. The most frequent site of involvement was the face, followed by the lower limbs. Patients with a family history frequently first appear when they are young.

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