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Clinico-epidemiological study of Childhood Vitiligo in North India

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ABSTRACT

Background: Vitiligo is a common chronic disorder of pigmentation which has serious psychosocial implications. Early onset or childhood vitiligo, although clinically similar to adult onset vitiligo, has been found to have a distinct epidemiological, clinical, therapeutic, and prognostic profile.

Methods: This study was carried out to study the clinicoepidemiological characteristics of vitiligo in patients aged <18 years. It was a prospective, observational study carried out over a period of 1 year in which 80 children having vitiligo were examined. After taking an informed consent from the attendants/parents of the patients, a complete history including age, sex, and duration of the disease, family history, history of Koebner's phenomenon, and history of associated diseases was noted.

Results: The study group comprised of 46 females and 34 males (male:female 1:1.35), aged between 3 months and 17 years with a mean age of 8.45 ± 2.34 years and the mean age of onset was 5.7 years. The most common clinical subtypes observed in childhood vitiligo were vitiligo vulgaris in 46.25%, followed by focal in 31.25%, acrofacial in 16.25% patients, segmental in 3.75% and mucosal in 2.25%. A family history of vitiligo was seen in 16.25% patients. Lower limbs were most common site. Leukotrichia was observed in 11 patients, Koebner phenomenon in 13, and halo nevus in one patient. Alopecia areata was seen in 5% and hypothyroidism in 5%.

Conclusions: Childhood vitiligo is a common entity with vitiligo vulgaris being the most common subtype and lower limbs being the most common site of involvement. Children with positive family history had an earlier age of onset, and thyroid abnormalities were more common in nonsegmental variant.

Keywords: childhood vitiligo, autoimmunity, segmental vitiligo, vitiligo INTRODUCTION

Vitiligo is an acquired depigmenting skin disease resulting from loss of functional melanocytes. It is a common skin disorder with prevalence of between 0.5% to 4% in the general population. It has a variable age of onset, but many studies have reported that around 50% of the patients have an onset before the age of 18 years and a quarter before the age of 10 years. Vitiligo in childhood is associated with significant psychological distress that may have longlasting effects on the psychosocial development of these children. Childhood vitiligo, although clinically similar to adult onset vitiligo, has been found to have a distinct epidemiological, clinical, therapeutic, and prognostic profile (Image1).



Image 1

There are only few studies from India and other parts world that have described the the of clinico-epidemiological profile of vitiligo in children and thus, there is a paucity of data regarding the same. Hence, this study was undertaken to epidemiological the clinical understand and presentations of vitiligo in children.

METHODS

It was a prospective, observational study carried out over a period of 1 year in the department of dermatology at a tertiary care hospital in north India in which 80 paediatric patients with vitiligo were included after taking an informed consent from the attendants/ parents of the patients. A complete history including age, sex, duration of the disease, age of onset, family history, and history of Koebner' phenomenon, and history of associated diseases, was elucidated and noted. All the patients were thoroughly examined, and the following data like sites of vitiligo, area of involvement, leukotrichia, and pattern of the vitiligo was noted. The patients were classified into two groups of vitiligo: Localized (focal, segmental, and mucosal) and generalized (vulgaris, acro-facial, and universal). Focal vitiligo was defined as single or few lesions localized to one body part not forming any specific pattern. Segmental vitiligo is characterized by presence of depigmented macules arranged unilaterally in a localized area of the body having a dermatomal or blaschkoid pattern. Mucosal vitiligo was defined as unique involvement of oral or genital mucosa. Vitiligo vulgaris was described as multiple lesions predominantly occurring over the trunk, shoulders, arms and thighs. Lesions occurring over face, neck, hands, forearm, feet and legs were termed as acro-facial vitiligo. Lip-tip vitiligo is considered to be a special type of vitiligo where lesions occur over lips and periungual areas. When there is complete or

near complete involvement of the body with depigmentation, it is known as universal vitiligo. Laboratory parameters like hemogram,triiodothyronine (T3), thyroxine (T4), and thyroid stimulating hormone levels were performed in all patients.

RESULTS

A total of 80 paediatric vitiligo patients were studied. The study group comprised of 46 females and 34 males with male: female ratio of 1:1.35 (Fig 1)



Fig 1: Case distribution as per sex

Patients were aged between 3 months and 17 years with a mean age of 8.45 ± 2.34 years. The duration of the disease ranged from 1 month to 10 years, the average duration was 1.6 years, and the mean age of onset was 5.7 years. A family history of vitiligo was seen in13 (16.25%) patients, and the mean age of onset in these patients was 4.9 years (Fig 2).



Fig 2: Case distribution as per family history of Vitiligo

Hypothyroidism was seen in 4 (5%) patients and family history of hypothyroidism was seen in 12 (15%) patients. clinical subtypes observed in childhood vitiligo were vitiligo vulgaris in 46.25% (n = 37) followed by focal in 31.25% (n = 25), followed by acrofacial in 16.25% patients (n = 13), segmental in 3.75% (n=3), and mucosal in 2.25% (n=2) (Table 1) (Images 2,3,4). The most common site for vitiligo was lower limb seen in 42 (52.5%) patients, followed by face 35 (43.75%), upper limbs 15 (18.75%), scalp and mucosal 14 (17.5%)

S No	Type of Vitiligo	Percentage among total cases
1	Vitiligo Vulgaris	46.25% (n = 37)
2	Focal	31.25% (n = 25)
3	Acrofacial	16.25%(n = 13)
4	Segmental	3.75% (n=3)
5	Mucosal	2.25% (n=2)
	Total	100% (n= 80)

Table 1: Clinical subtypes of childhood Vitiligo

Leukotrichia was observed in 11(13.75%) patients, Koebner phenomenon in 13 (16.25%), and halo nevus in one patient. Segmental vitiligo was seen in 3 patients and nonsegmental in 77 patients. Alopecia areata was seen in 4 (5%) patients.



Image 2: Vitiligo vulgaris



Image 3: Mucosal Vitiligo

Image 4: Focal Vitiligo



DISCUSSION

The vitiligo is a common, acquired disorder, characterised by depigmented macules and absence of functional melanocytes.¹ Most of the studies shows a female preponderance, barring a few Chinese studies in which the sex ratio is almost equal²⁻⁵. Studies from the Indian sub-continent have also shown higher female incidence with 57.1% in north India and 61.1% in south India. In an Indian study by Jaisankar et al., out of the 90 children, with vitiligo, 38.9% were boys and 61.1% were girls, which were statistically significant⁶. In another recent study too, higher incidence (56.7%) of childhood vitiligo in girls was seen⁷. This higher preponderance in female may be attributed to early medical help by parents in view of cosmetically disfiguring nature of the disease. Our study also confirms the same female gender (57.5%) preponderance with male incidence being 42.5%. The mean age of onset of childhood vitiligo has been reported to range from 5.6 to 7.28 years, which in our study was 5.7 years^{4,8,9}. A positive family history of vitiligo was seen in 13 (16.25%) patients and the mean age of onset in these patients was lesser in our study population (4.9 years vs. 5.7 years). Different studies have reported the incidence of positive family history ranging from 11% to 46% and researchers have reported a lower age of onset in this subgroup of patients^{4,5,9}. Pajvani et al. reported a lower age of onset of vitiligo in patients with positive family history of vitiligo or other autoimmune disorders⁹. In our study, 16.25% (n = 13) patients had a positive family history of vitiligo, and the mean age of onset among this subgroup was 4.9 years as compared to 5.6 years in the total study population in present study vitiligo vulgaris was the most common subtype in 46.25% (n = 37) followed by focal in 31.25% (n = 25), acrofacial in 16.25% (n=13), segmental in 3.75% (n=3), and mucosal 2.25% (n=2). Various studies have reported vitiligo vulgaris to be the most common presentation followed by focal and segmental vitiligo³⁻⁵.Kanwar et al., in their study of childhood vitiligo in 100 patients, reported vitiligo vulgaris to be the most common subtype seen in 61%, followed by focal vitiligo in $23\%^{10}$.

Most of the studies show lower limbs were most common site affected. In a study by Sheth et al., also reported that the most common sites of involvement were lower limbs seen in 62%, followed by face

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(46%), upper limbs (30%), scalp (25%), and mucosal $(18\%)^{11}$. In our study also most common site for vitiligo was lower limb seen in 42(52.5%) patients, followed by face 35 (43.75%), upper limbs 15 (18.75%), scalp and mucosal 14 (17.5%). This finding was in contrast to Hann and Lee who reported that the most common initial site of onset of both non segmental and segmental vitiligo in children is the face and neck¹². Mucosal vitiligo had a varied incidence ranging from 0.6% in Handa and Dogra⁷ study to 13.8% in Jaisankar et al.study⁶. In our study, we found 8 patients of isolated mucosal involvement. Leukotrichia is a common presentation in vitiligo with various studies reporting an incidence rate varying from 3.7% to 32.5%, being most commonly associated with vitiligo vulgaris. In our study, the leukotrichia was seen in 11 (13.75%) patients showing Koebner's phenomenon is another common feature seen in vitiligo, which is an indicator of disease activity. In our study, Koebner's phenomenon was seen in 13 (16.25%), which was lesser than the rates reported in various other studies which vary from 21.5% to $34\%^{3,5,10}$

Association of autoimmune disorders in children with vitiligo is far less as compared to adults. Among the Indian studies, Handa and Dogra⁷ showed 1.3% of autoimmune association, while Jaisankar et al⁶. showed no associations in their patients. In the present study, childhood vitiligo was seen associated with alopecia areata 5% and hypothyroidism in 5% of patients, and positive family history of hypothyroidism in 15%.

CONCLUSION

The prevalence of vitiligo among children is high with a female predominance and an earlier age of onset seen among patients with family history of vitiligo or autoimmune disorders. Vitiligo vulgaris is the most common presentation with lower limbs being the most common site of involvement. Alopecia areata and hypothyroidism are sometimes associated.

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