Clinico-Epidemiological Profile of Childhood Vitiligo

Dear Editor,

In contrast to adult vitiligo, childhood vitiligo shows a female preponderance. In childhood vitiligo, the most common sub-type is segmental vitiligo, and it is observed that association with systemic auto-immune and endocrine disorders is less frequent.[1,2] It has distinct epidemiological and clinical characteristics as compared to those of adult disease.[1] There are only a few studies from India and other parts of the world that have described the clinico-epidemiological profile of childhood vitiligo, and thus, there is a paucity of data regarding the same.[1] Hence, a retrospective, observational study was conducted from January 2019 to September 2022 to understand the epidemiological and clinical presentations of vitiligo in children. Data of patients with childhood vitiligo who visited the out-patient department of Pediatric Dermatology, Cutis Academy of Cutaneous Sciences, Bengaluru, were collected and analyzed.

In this retrospective study, we included a total of 117 patients with childhood vitiligo. Out of 117 patients, 65 (55.6%) were females, while 52 (44.4%) were males, with a female-to-male ratio of 1.25:1. The median age of onset was 7.5 (1–16) years, while the median duration of the disease was 1 (0–10) year. Vitiligo vulgaris was the most common sub-type [71.8% (n = 84)]. Only 12 (10.3%) patients had associated auto-immune diseases. Among the associated dermatologic diseases, the most common was atopic dermatitis, followed by alopecia areata. Among family history of associated auto-immune diseases, only hypothyroidism and diabetes mellitus were reported (as shown in Table 1).

Various treatment modalities were used for treating the patients. The treatment modalities can be grossly categorized as topical therapy, phototherapy and systemic therapy. Most patients were prescribed a combination of therapies. Among topical therapy, the most commonly used was topical steroids (TS) [69.2% (n = 81)]. Phototherapy was given to 64.1% (n = 75) patients, and the most common modality used was narrow-band ultraviolet B (NB-UVB) [31.6% (n = 37)]. Systemic therapy was administered to 64.9% (n = 76) patients (as shown in Table 2). Methylprednisolone was the systemic steroid used at a dosage of 1 mg/kg/week in divided doses. Oral methotrexate (Mtx) was prescribed as a steroid-sparing agent at a dose of 0.2–0.4 mg/kg/week.

The findings in our study are similar to the findings of other studies conducted in childhood vitiligo.[3-5] We found that the median duration of disease is 1 (0–10) year. This finding is further supported by another study conducted by Anaba EL *et al*. in 2018, where he compared the characteristics of adult and childhood vitiligo.[6] In this study, vitiligo vulgaris or generalized vitiligo was found to be the most common among the pediatric population, which is similar to other studies conducted in the Indian population.[4] However, in another Indian study, Agarwal S *et al.* in 2013, acrofacial vitiligo was found to be the most common, followed by vitiligo vulgaris in the pediatric age group.[5] Various studies have demonstrated the increased risk of several auto-immune diseases in patients with vitiligo, most commonly thyroid disorders, followed by diabetes mellitus, alopecia areata, psoriasis, and pernicious anemia.[7] On the contrary, in the current study, only 10.3% of patients had associated concomitant dermatologic disorders, of which the most common was atopic dermatitis,

Table 1: Distribution of various parameters associated with childhood vitiligo across gender

Parameters		Male [*n* (%)]	Female [*n* (%)]	Total [*n* (%)]
Age of onset	0-5 years	15 (12.8%)	16 (13.7%)	31 (26.5%)
	6-10 years	25 (21.4%)	32 (27.4%)	57 (48.7%)
	11-17 years	12 (10.3%)	17 (14.5%)	29 (24.8%)
Type of vitiligo	Vitiligo vulgaris	39 (33.3%)	45 (38.5%)	84 (71.8%)
	Localized vitiligo	9 (7.7%)	8 (6.8%)	17 (14.5%)
	Acrofacial	3 (2.6%)	9 (7.7%)	12 (10.3%)
	Segmental	1 (0.9%)	3 (2.6%)	4 (3.4%)
Autoimmune disease	Present	5 (4.3%)	7 (6%)	12 (10.3%)
	Absent	47 (40.1%)	58 (49.6%)	105 (89.7%)
Koebner's phenomenon	Present	17 (14.5%)	19 (16.2%)	36 (30.8%)
	Absent	35 (29.9%)	46 (39.3%)	81 (69.2%)
Stability of disease	Stable	10 (8.5%)	12 (10.3%)	22 (18.8%)
	Unstable	42 (35.9%)	53 (45.3%)	95 (81.2%)
Vitiligo family history	Present	7 (6%)	18 (15.4%)	25 (21.4%)
	Absent	45 (38.5%)	47 (40.1%)	92 (78.6%)
Autoimmune disease family history	Present	8 (6.8%)	7 (6%)	15 (12.8%)
	Absent	44 (37.6%)	58 (49.6%)	102 (87.2%)

Table 2: Distribution of various treatment modalities of childhood vitiligo across gender

Treatment modalities		Male [*n* (%)]	Female [*n* (%)]	Total [*n* (%)]
Topical therapy	Steroid (TS)	37 (31.6%)	44 (37.6%)	81 (69.2%)
	TCI	35 (29.9%)	44 (37.6%)	79 (67.5%)
Phototherapy	NB-UVB	14 (12%)	23 (19.7%)	37 (31.6%)
	Excimer	16 (13.7%)	17 (14.5%)	33 (28.2%)
	Hand-held	5 (4.3%)	0 (0%)	5 (4.3%)
Systemic therapy	Methotrexate	15 (12.8%)	26 (22.2%)	41 (35%)
	Oral steroid	11 (9.4%)	24 (20.5%)	35 (29.9%)

followed by alopecia areata. Similar findings were also observed in several other studies conducted in the Indian population.[4,5] Koebner phenomena is used as a marker of disease activity and as reported by Agarwal S *et al.*[5] in 2013 occurs in 24.3% (n = 66) of patients with childhood vitiligo compared with 30.8% (n = 36) in the present study. The incidence of positive family history in vitiligo patients is 11–46%, as reported by different studies.[3-5] In this study, we found positive family history of vitiligo in 21.4% (n = 25) of pediatric patients. A positive family history highlights the role of genetic factors in developing vitiligo, particularly in the Indian population.

Topical corticosteroids are used as first-line treatment for active vitiligo, which sheds light on the usage of TS by 69.2% (n = 81) of patients in this study. Several studies have shown that topical corticosteroids are moderately effective to induce re-pigmentation of vitiligo.[3-5] On the other hand, topical calcineurin inhibitors (TCIs) are particularly useful as steroid-sparing agents for long-term usage. In the current study, TCI was prescribed to 67.5% (n = 79). This finding is similar to other studies conducted in India.[4,5] In the current study, 64.1% patients received phototherapy, while NB-UVB was the most common mode of phototherapy. NB-UVB therapy offers the advantage of being safe in children as a photosensitizing agent is not required and it is not associated with ocular complications.[8] We found that systemic therapy was administered to 64.9% (n = 76) patients. For rapidly progressive vitiligo or vitiligo vulgaris, patients were commenced on methylprednisolone, followed by Mtx as a steroid-sparing agent.[9]

To conclude, this study in the Indian pediatric population found that childhood vitiligo has a slight female preponderance, with the age of onset around 6–10 years, usually presenting as vitiligo vulgaris, and is sometimes associated with other auto-immune diseases and family history.

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Conflicts of interest

There are no conflicts of interest.

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