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Original Research Article

Clinico demographic evaluation of vitiligo and associated autommune disorders: A prospective study in up region

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ABSTRACT

Introduction : This study was carried out with an objective to document clinico-epidemiological features of vitiligo from this part of the country having varied geo-climatic conditions, rural and semi-urban communities of diverse ethnic backgrounds.
Materials and Methods : The diagnosis of vitiligo was essentially clinical, confirmed by at least three senior dermatologists. Clinically ambiguous cases and lesions not accentuating under Woods' light were excluded. The vitiligo patients were classified according to recent Bordeaux vitiligo global issues consensus conference classification and consensus nomenclature into three groups, viz. non-segmental, segmental, and unclassified vitligo.
Result : There were 390 men and 460 women (m:f 1:1.1) aged between 2 and 80 years (mean 23.5 years) at presentation. The patients were distributed across all age groups and the majority 450 (52.9%) patients were aged ≤20 years and also comprised 230 (27.5%) children aged up to 12 years.
Conclusion : The patients with an affected first-degree family member may have more chances of onset at an early age compared with others but without a significant difference.

1. Introduction

Vitiligo is a common, acquired disorder characterized by depigmented cutaneous macules usually devoid of functional melanocytes. These lesions are cosmetically disfiguring and usually cause emotional trauma in both children and adults. Vitiligo affects all races and both sexes almost equally. The disorder affects nearly 1%–2% of the world population irrespective of race and ethnicity with highest incidence recorded in Indian subcontinent followed by Mexico and Japan.[1–3] The exact etiology of vitiligo is poorly understood and is often considered as a multifactorial disease with a complex pathogenesis encompassing several postulations implicating autoimmune, cytotoxic, biochemical, oxidant– antioxidant, viral, and neural mechanisms for destruction of the melanocyte function in genetically predisposed. A proportion of up to 30% patients with positive family history vary across regions and ranges from 6% to 18% in general and was as high as 40% in an Indian study.[3,4]

The precise cause of vitiligo is unknown. Multiple theories have been proposed including theories based on autoimmune, neural, and autocytotoxic phenomenon.[5–8] The disease has a familial incidence of 1.56-34%.[9–13] Genetic studies suggest a polygenic inheritance pattern.[14] Vitiligo has been reported in association with several endocrinopathies and other disorders of autoimmune nature.[15,16] Our objective in this five year prospective study were to explore the nature of vitiligo in Northern India region, and to establish the clinical characteristics of vitiligo and its association with other diseases. This study was carried out with an objective to document clinico-epidemiological features of vitiligo from this part of the country having varied geo-climatic conditions, rural and semi-urban communities of diverse ethnic backgrounds and living styles differing from rest of the country and especially

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in view of a recent study demonstrating polymorphism of Liver X receptor a −6A and + 1257T alleles imparting risk of vitiligo in North Indian population.[17]

2. Materials and Methods

The medical records of all patients with vitiligo attending outpatient clinic during Jan 2014 to Dec 2018 were analyzed retrospectively for this descriptive observational study. The study was approved by the Institutional Protocol Review Board and Institutional Ethics Committee. The diagnosis of vitiligo was essentially clinical, confirmed by at least three senior dermatologists. Clinically ambiguous cases and lesions not accentuating under Woods' light were excluded.

The vitiligo patients were classified according to recent Bordeaux vitiligo global issues consensus conference classification and consensus nomenclature[18] into three groups, viz. nonsegmental, segmental, and unclassified vitligo. Nonsegmental vitiligo (NSV) was further classified as acrofacial, generalized, universal, mucosal (more than one mucosal sites), and mixed vitiligo. Unclassified vitiligo included focal and mucosal (one site in isolation). Acrofacial vitiligo was defined as multiple, bilateral, symmetrical depigmented macules involving acral region of the extremities and peri-orifacial regions. Vitiligo vulgaris (common vitiligo as per new nomenclature) was defined as scattered macules widely distributed usually symmetrical. Vitiligo was defined as universal if more than 80% body surface area was involved. Mixed vitiligo refers to concomitant occurrence of segmental and NSV. Mucosal vitiligo was defined as involvement of the oral and/or genital mucosae. Segmental vitiligo refers to one or more depigmented macules in a single or multidermatomal configuration. Focal vitiligo was defined as one or more depigmented macules in one area, but not in a dermatomal distribution.

2.1. Statistical methods

MS Word Excel software was used to tabulate and analyze the data. The continuous data are presented as means and categorical variables are presented as frequencies and percentages. The two-sample t-test was used to determine whether the difference between means is significant. A P value <0.05 calculated at 95% confidence limit was considered statistically significant.

3. Results

The study comprised 850 patients with vitiligo accounting for 0.39% of 2, 16,412 patients attending dermatology outpatient clinic during the study period. Acrofacial type of vitiligo (352 cases out of 850, 41.4%) was observed to be most common, followed by vitiligo vulgaris, focal, segmental, mucosal, mixed, and universal vitiligo, as shown in Table 1. Different patches of vitiligo were shown in Figures 1, 2 and 3 .

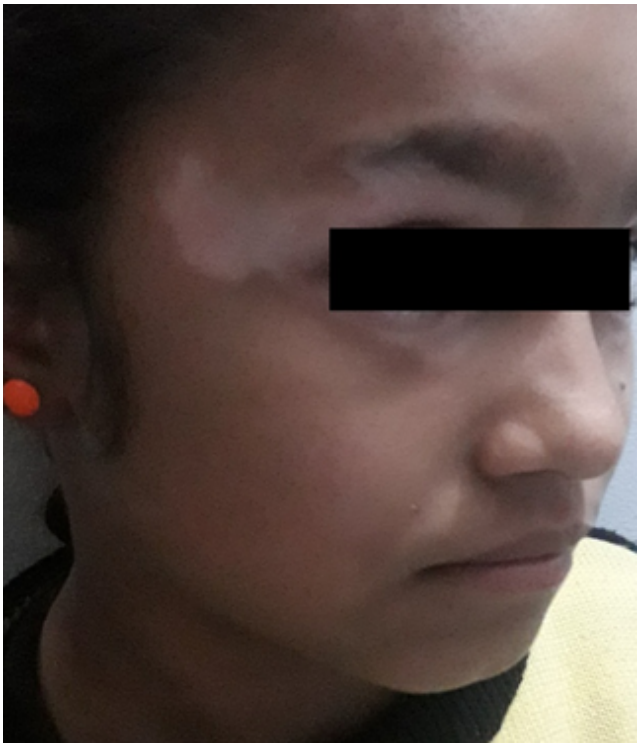

Fig. 1: Discolored Patches around eyes in vitiligo

Table 1: Type ofvitiligo

Type of vitiligo	Number of Cases	Percentage
Nonsegmental		
Acrofacial	352	41.41
Vulgaris	268	31.52
Mucosal	20	2.35
Mixed	10	1.17
Universal	10	1.17
Segmental	84	9.88
Unclassified		
Focal	98	11.52
Mucocal	8	0.94
Total	850	100

Their clinico-epidemiological profile, frequency of vitiligo patterns, and associated disorders are shown in Table 2. There were 390 men and 460 women (m:f 1:1.1) aged between 2 and 80 years (mean 23.5 years) at presentation. The patients were distributed across all age groups and the majority 450 (52.9%) patients were aged $\leq$20 years and also comprised 230 (27.5%) children aged up to 12 years. The age at onset was between 6 month and 80 years (mean 19.5 years) and the majority with affected family members was between 1.5 and 65 years (mean 18.3 years) compared with 6 months and 82.5 years (mean 19.6 years) in other 795 patients and the difference

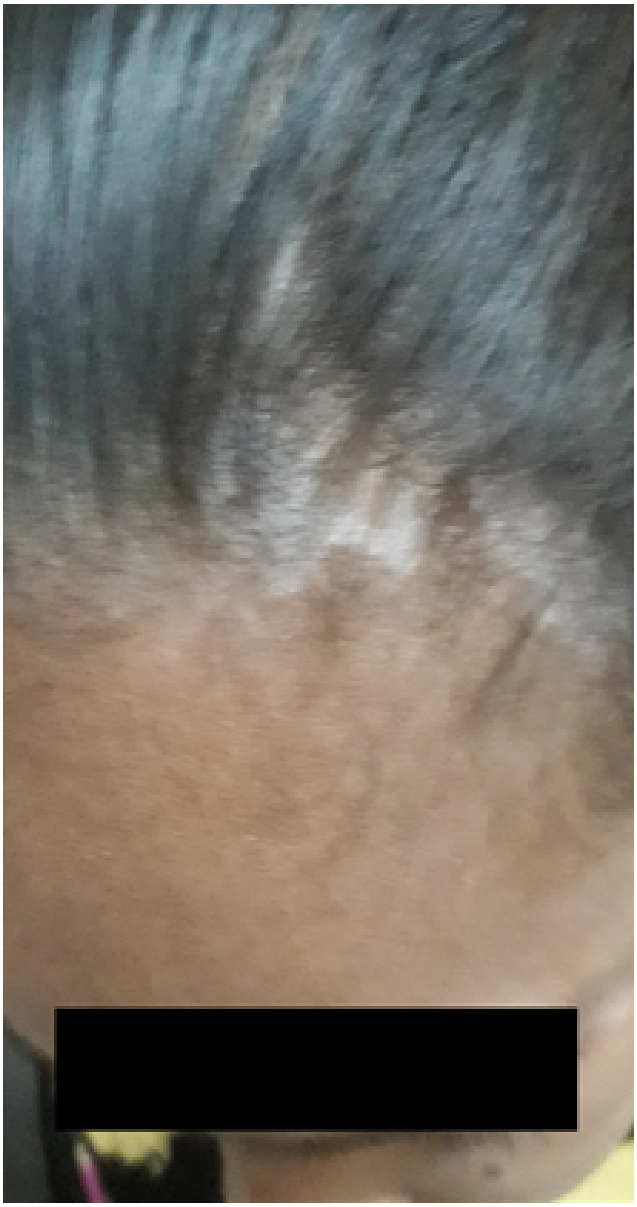

Fig. 2: Discolored Patches in scalp

was not statistically significant. Only 172 (20.2%) patients implicated physical trauma (in 121 patients), surgery, medical or psychological illness (in 33 patients), and pregnancy/parturition (in 18 patients) as trigger factors.

4. Discussion

Vitiligo affects both genders almost with equal frequency in most reports or with a predilection for women being affected two times more often than men as an exception.[1,2,19] Vitiligo affected 0.43% of dermatology outpatients of both genders almost with equal frequency in this study conforming to these epidemiological patterns. The mean duration (5.1 years) of vitiligo in our patients at consultation

Table 2: Clinico-epidemiologicalfeatures of vitiligo patients (n=850)

Features	Number of patients (%)
Gender	
Men	390 (45.8)
Women	460 (54.1)
Men:women	1:1.1
Age (years)	
Range	2-80
Mean	23.5
≤20	450 (52.9)
>20-40	240 (28.2)
>40-60	125 (14.7)
>60-80	35 (4.1)
Children ≤12	230 (27.5)
Duration of disease	
Range	1 week-64 years
Mean (years)	5.1
≤1 m	54 ((6.3)
>1‑6 months	168 (19.7)
>6 months-1 year	130 (15.2)
>1-5 years	269 (31.6)
>5-10 years	110 (12.9)
>10 years	119 (14)
Age at onset of vitiligo (years)	
Range	6 months-80 years
Mean	19.5
≤5	111 (13.0)
>5-0	194 (22.4)
>10-15	159 (18.7)
>15-20	88 (10.3)
>20-25	68 (8)
>25-30	50 (5.8)
>30-35	35 (4.1)
>35-40	25 (2.9)
>40-45	28 (3.2)
>45-50	27 (3.1)
>50	65 (7.6)
Sites of onset*	
Lower limbs	238 (28)
Scalp, face, and neck	228 (26.8)
Trunk	153 (18)
Upper limbs	108 (12.7)
Eyelids	91 (10.7)
Lips	20 (2.3)
Mucosal/anogenital skin	12 (1.4)
Triggering factors	
Identified by patients	172 (20.2)
Physical trauma	121
Pregnancy/parturition	18
Psychological stress	12
Surgery	10
Medical illness	11
Family history of vitiligo	
Present	135 (15.9)
First-degree relatives	84
Second-degree relatives	30
Third-degree relatives	21
Age at onset	
Range, mean (years)	1.5-65
Family history of vitiligo	
Absent	715 (84.1)
Age at onset	
Range, mean (years)	6 months-80 years (19.6)
P	0.48

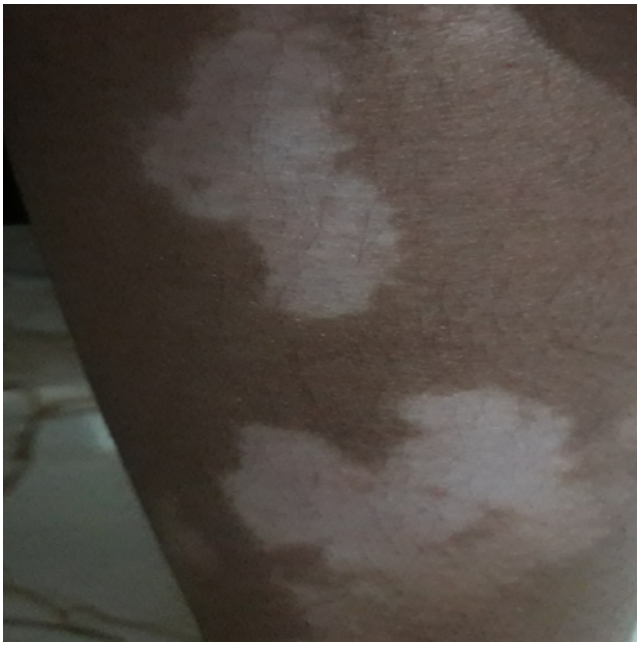

Fig. 3: Discolored Patches forearm

is also similar and corroborates its slow progression and asymptomatic nature.

Although vitiligo may develop anytime in life, the onset in early infancy or old age is uncommon. Genetic factors, as in patients with affected first-degree relatives, too have suggested to influence the age of onset of vitiligo but no significant difference in onset of vitiligo with affected family members compared with those having no vitiligo-affected family member was observed in this study[20–23] The mean age of onset is before 20 years of age in case of childhood vitiligo but varies between 18 and 32 years in adults.[20,24] In contrast, its onset was between the ages of 40 and 60 years in a study from Denmark and the prevalence declined after 70 years of age.[21] Though the mean age of onset at 20.5 years in our study indicates that vitiligo predominantly affects the younger population, its onset in a 6-month-old child and adults aged above 80 years is, however, notable.

Leucotrichia has been reported in 9-48.4% of the patients with vitiligo.[10,25–29] Significance is attached to this finding as these cases also showed resistance to therapy. It may also be considered as poor prognostic factor. Leucotrichia was seen in 255 (33.5%) of our vitiligo patients. Koebner phenomenon has been reported to occur in up to 33.0% of vitiligo patients.[30] It was seen in 26.3% of our vitiligo patients similar to other studies. However, it was less prevalent in the studies done by Handa et al.[26] and Akay et al.[31] (5% and 7.3%, respectively). Lower limbs were the most common sites for the onset in 257 (33.7%) patients. It is in concordance with many studies,[9,25,32] though some studies[10,33] report face as the most common site of onset of vitiligo. Karelson et al.[27] has reported upper limbs as most common site of vitiligo. The exact significance of this observation is difficult to appreciate. Nevertheless, we believe that exposed and trauma-prone sites, such as the lower limbs and hands, may develop vitiligo lesions more easily in genetically predisposed individuals.

5. Conclusions

This clinico-epidemiological study of vitiligo in the Northern India region has shown that acrofacial vitiligo is the most common clinical type observed. The patients with an affected first-degree family member may have more chances of onset at an early age compared with others but without a significant difference. Screening these patients for concurrent thyroid disorders that may have a bearing on prognosis and therapeutic outcome needs to be emphasized.

6. Source of Funding

None.

7. Conflict of Interest

None.

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Author biography

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