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Clinico-Epidemiological Study of Vitiligo in a Tertiary Care Centre of West Bengal, India

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Abstract:
Background: About 0.5-2% of the world population is affected by Vitiligo. Vitiligo affects all races of the world; the highest incidence has been recorded in India and Mexico.
Objective: The objective of the current study to explore the clinico-epidemiological profile of Vitiligo in patients attending dermatology OPD of a tertiary care centre in Kolkata, West Bengal.
Methods: A descriptive, observational study was carried out over six months from May 2012 to November 2012. Total of 70 patients of Vitiligo were interviewed and clinically examined.
Results: Majority of patients were in the age group of 21-30 years. The average age of participants was 33.1 years. Female: male ratio of the participants was 2.04:1. A positive family history of Vitiligo was found in 18.56% of patients. A majority had the age of onset of Vitiligo in 2nd decade (26, 37.1%). The average duration of disease was 7.3 years. Vitiligo Vulgaris is the most common type found in 40% (28) of patients. Hypothyroidism (9, 12.8%) was the most common comorbidity, followed by diabetes mellitus, which was present in 10% of patients.
Conclusion: Vitiligo Vulgaris is the most common clinical type among Vitiligo patients. Majority of cases had onset in the second decade of life. Positive family history was present in 18.56% of patients. We also observed a high occurrence of comorbidities like thyroid disorder, diabetes mellitus, alopecia areata, chronic urticaria and psoriasis, with Vitiligo.
Keywords: Vitiligo, clinical profile, India, West Bengal

Background

Vitiligo is an acquired primary, usually progressive melanocytopenia of unknown aetiology. It is clinically manifested by circumscribed depigmented macules often associated with leucotrichia, i.e., whitening of hair. The disease affects people of either sex with a heritable constitutional predilection.

About 0.5-2% of the world population is affected by Vitiligo .[1] Vitiligo affects all races of the world; the highest incidence has been recorded in India and Mexico. Though male and female are equally affected, a female preponderance is often noticed probably because more number of females seeks medical help for this problem. Onset is usually in 1st or 2nd decade.

In India, an incidence, as high as 8.8% has been reported from a study in Delhi [2] and Panja et al. (1947) reported an incidence of 6%. [3]Furthermore, Levai (1958) found it to be 4%.[4]

The difference in incidence in India may be due to a higher reporting of Vitiligo in a population, where an apparent colour contrast and stigma attached to the condition may force patients to seek early medical consultation.[5]

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The typical lesion of Vitiligo is a chalky white macule which may be associated with white hair. There is no surface change. The lesions are usually asymptomatic though a few patients may complain of itching.
The spectrum of the clinical profile has not adequately studied in the east part of India. Therefore, our objective in this study was to explore the clinico-epidemiological profile of Vitiligo in patients attending dermatology OPD of a tertiary care centre in Kolkata, West Bengal.

Methods:
The study was done in the outpatient department of Dermatology in IPGME & R and SSKM Hospital Kolkata, a tertiary care centre catering to the people of West Bengal and adjacent states of Eastern India. Ethical approval was obtained in the year 2012 from institutional ethical board of IPGME & R and SSKM Hospital, Kolkata (Ethical approval number 1413, dated 07/01/2012). Participant's information sheet was provided to all the participants and written informed consent was obtained from them.
It was a descriptive, observational study carried out over six months from May 2012 to November 2012. The study was approved by the Institutional Ethics Committee. The diagnosis of Vitiligo was primarily clinical, and 70 adult patients with Vitiligo coming for the first time were included. After taking informed consent from the patients, the clinical characteristics of the patients were noted in a predesigned proforma. A complete history including age, sex, duration of the disease, family history, history of Koebner's phenomenon, and history of comorbidities, were noted. The patients were thoroughly examined, and data such as the pattern of Vitiligo, sites of involvement, leukotrichia, and halo nevus were documented.
Vitiligo was classified according to Nordlund classification[6] into localized, generalized and universalis type, based on distribution and extension of lesions.

1. Localized Vitiligo: it can be further classified into:
    a. Focalis- one or more patches in one area but not in a segmental pattern.
    b. Segmental- one or more patches in dermatomal distribution.
    c. Mucosal- involvement of mucus membrane of mouth or genitalia.
2. Generalized vitiligo-can be subdivided into:
    a. Acrofacial- affecting the face and distal extremities.
    b. Vitiligo Vulgaris- the most common variety.
    c. Mixed- segmental with Vulgaris or acrofacial type.
3. Universal Vitiligo- involving more than 80% of the body surface area.

Progression of disease was defined as an extension of old lesions or appearance of new lesions in the last one year. No increase in size in any lesion or non-appearance of the new lesion was defined as a stable case. While reducing and repigmenting cases in the last one year were defined as regressing. [7]
Data were entered in Microsoft excel 2016 software and analysed using SPSS version 21. (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp) All descriptive results are presented as number and percentages in frequency tables.

Results
The study was conducted in the outpatient department of Dermatology in IPGME & R and SSKM Hospital Kolkata. From May 2012 to November 2012, 70 clinically diagnosed patients of Vitiligo were interviewed and included in the study.
Majority of patients were in the age group of 21-30 years. The average age of presentation was 33.11 years. [Table 1] Total 70 vitiligo patients were recruited for the study; out of them, 23 were male while 47 were female. The sex ratio had a female preponderance with the female male ratio of 2.04:1.[Table 1]

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Table 1: Demographic details of participants

Demographic parameter	No. of patients	Percentage
Age groups		
≤20 years	12	17.1%
21-40 years	40	57.1%
41-60 years	16	22.9%
≥60 years	2	2.9%
Sex distribution		
Male	23	32.85%
Female	47	67.14%

A positive family history of Vitiligo was found in 18.56% of patients. Out of them, 14.28% (10) patients had 1st-degree relatives afflicted with Vitiligo while 4.28% (3) had a 2nd-degree relative with Vitiligo.
A majority had the age of onset of Vitiligo in 2nd-decade (26, 37.1%). The average age of onset of Vitiligo was 25.8 years. [Table 2]

Table 2: Age of onset

Age of onset in yrs.	No. of patients	Percentage
1-10 yrs	5	7.14%
11-20 yrs	26	37.14%
21-30 yrs	18	25.7%
31-40 yrs	9	12.8%
41-50 yrs	8	11.4%
51-60 yrs	3	4.28%
61-70 yrs	1	1.4%

The average duration of disease was 7.3 years. Most patients (29, 41.4%) had duration of disease 1-5 years, followed by 5-10 years (19, 27.1%), more than ten years (17, 24.8%) and less than one years (5, 7.1%).
Vitiligo Vulgaris is the most common type, found in 40% (28) of patients, while Vitiligo Universalis is the least common type, found in only 1.4% (1) of patients. [Table 3]

Table 3: Type of Vitiligo

Type of Vitiligo	No. of patients	Percentage
Focal	11	15.7%
Segmental	4	5.7%
Acrofacial	22	31.4%
Vulgaris	28	40%
Mucosal	2	2.85
Mixed	2	2.8%
Universalis	1	1.4%

Hypothyroidism (9, 12.8%) was the most common comorbidity followed by diabetes mellitus, which was present in 10% of patients. [Table 4]

Table 4: Comorbidities among participants

Comorbidity	No. of patients	Percentage
Hypothyroidism	9	12.8%
Diabetes mellitus	7	10%
Chronic urticaria	2	2.8%

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Psoriasis	1	1.4%
Alopecia areata	1	1.4%
None	50	71.4%

Most (57.1%, 40) of the participants showed disease in progression phase, followed by a stable phase (25, 35.7%) and regression phase (5, 7.1%). Koebnerization was present in 18.1% of patients, while leuchotrichiasis was seen in 25.71% of patients.

Discussion

Vitiligo is a common pigmentary disorder with significant cosmetic and psychological morbidity. It remains an enigma and difficult disease to treat. Substantial research has been done in the last few decades regarding vitiligo aetiology and pathogenesis. However, an exact aetiology remains to be known, and a definitive cure for the disease is still far from reach.

The present study included 70 patients of Vitiligo who attended dermatology OPD of IPGMER and SSKM Hospital, Kolkata from May 2012 to November 2012. The criteria for inclusion in this study were mainly clinical and consisted of new adult patients with Vitiligo.

The disease is more commonly reported in females. Males constituted 32.85% while female constituted 67.14% of patients in this study, giving a female-male ratio of 2.04:1. These results are similar to various other studies where a female predominance is reported. A study reported an incidence of 59% in females and 41% in males. [8]Another previous study reported a female-male ratio of 1.1:1, where female constituted 52.5% of patients and male constituted 47.5% of patients. [9]

The mean age of onset of Vitiligo was found to be 25.8 years in this study. A similar mean age of onset of disease is reported to be 25.6 years [10], 23.3 years [11] and 18.9 years [12] in previous studies. The earliest age at onset was three years, while the latest age at onset was 62 years, which is in accordance with the previously conducted study. In which the earliest age of onset was two years, and the latest was 75 years. [9]

Positive family history was found in 18.56% of patients in this study. Out of them, 14.28% of patients had 1st-degree relatives afflicted with Vitiligo, 4.28% had 2nd-degree relatives afflicted with Vitiligo. A study reported a positive family history of Vitiligo in around 18.8% of patients. First degree relatives were affected in 10% of the study population and second-degree relatives in 8.8% of patients. [9]

The average duration of disease at the time of presentation was 7.29 years which is similar to a study where the average disease duration was 7.4 years. [9]

In our study, Vitiligo Vulgaris was the most common type present in 40% of patients. Acrofacial type was seen in 31.4%, focal in 15.7%, segmental in 5.7%, mucosal in 2.85%, mixed type in 2.8% and Universalis in 1.4%. Other studies [13, 14]also reported that vitiligo Vulgaris is the most frequent presentation. Agrawal et al. reported acrofacial type to be the most common variety in their study. [15] A study from Libya by Singh *et al*. [16] also reported acrofacial Vitiligo is the most common type affecting 40.6% vitiligo patients.

Koebnerization was present in 18.1% of patients. Similarly, the Koebner phenomenon was observed in 20% of the patients in a study [9] and 33% of vitiligo patients in another study. [10]

Leuchotrichiasis was present in 25.71% of patients in this study. Prevalence of leukotrichiasis was seen in only 6.3%[9] and 43.5% of South Korean patients[17], which is in contrast to this study.

Among comorbidities, hypothyroidism was found in 12.8% of patients, diabetes mellitus in 10%, chronic urticaria in 2.8%, psoriasis in 1.4%, and alopecia areata in 1.4% of patients.

A previous study[9] reported thyroid disorder in 21.3% patients, diabetes mellitus in 13.8% of the patients, alopecia areata in 12.5%, pernicious anaemia in 2.5% of patients, rheumatoid arthritis in 1.3% of patients, atopic dermatitis 3.8%.

The prevalence of thyroid disorder in Vitiligo patients was 12.8% in our study which is similar to other studies which reported it to be 0.5% to 23**%**[9] and 12%[18] but in contrast to a study which

reported prevalence of thyroid disorder to be 4.4%[19].
Diabetes mellitus was found in 10% of patients in this study, the reported values were 1% to 7%[18], 7.1%[19], 1%[17], and 9% [20] in other studies.
Frequency of alopecia areata in Vitiligo was found to be 3%[21], 1.4%[22],and 1%[20]by other authors. This study showed alopecia areata in 1.4% of patients which is similar to other studies.
Total 57.14% patients in our study, reported progression in the last one year, 35.71% had a stable course while 7.14% reported regression.

Conclusion

This clinico-epidemiological study of Vitiligo in a tertiary referral centre of Kolkata shows vitiligo Vulgaris to be the most common clinical type. Majority of cases had onset in the second decade of life. Positive family history was present in 18.56% of patients. We also observed a high occurrence of comorbidities like thyroid disorder, diabetes mellitus, alopecia areata, chronic urticaria and psoriasis, with Vitiligo.

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