Journal of Pakistan Association of Dermatologists.2023;**33(1)**:37-42.

Original Article

Clinico-epidemiological study of vitiligo in a tertiary care hospital of Eastern India

Jayanta Kumar Barua, Kaushiki Hazra, Prabal Samanta, Param Satsangi, Tirtharaj Saha, Saswati Halder

Department of Dermatology, School of Tropical Medicine, Kolkata, India.

Abstract

Background Vitiligo is a common acquired pigmentary disorder with a worldwide incidence of 0.2-2% whereas in India it is 0.5-2.5%. Though having insignificant mortality, it causes heavy burden on the morbidity owing to its pycho-social impacts. Also, there is association with other autoimmune disorders like Type 1 diabetes Mellitus, thyroid disorder, pernicious anaemia, Inflammatory bowel disease, psoriasis, lichen planus, alopecia areata etc. There are several clinical variants like acrofacial, universalis, focal, segmental, mucosal etc. There are various treatment modalities both topical (steroids, calcineurin inhibitors psoralens) as well as systemic like steroids, psoralens, cyclosporine and JAK inhibitors like Tofacitinib.

Methods This is a clinico-epidemiological study conducted over a period of 6 months. Study population comprised of 100 consecutive patients attending the OPD. Written consent was provided to the patients followed by history taking and clinical examination. Severely ill, pregnant patients and those unwilling to participate were excluded. Study variables included both epidemiological and clinical parameters like age, sex, occupation, morphological type, age of onset, associated autoimmune diseases etc. Data collected was tabulated, analysed and compared with existing literature.

Results Out of 100 patients enrolled in our study, majority (48%) belonged to the age of adolescents and young adults (11-30 yrs.), mean age being 28.4. 54% were females. Majority (45%) had access to primary education but not completing secondary exam. Most (35%) had onset in childhood (<12 yrs.), while majority had duration of disease between 1-10 yrs. (58%). Only 3% had family history of vitiligo. Most of them (79%) had no obvious triggering factor while Half of the patients had stable disease for more than 1 year. 87% of the patients did not have any association with any other autoimmune disorders. Generalised vitiligo (41%) was the most common subtype while only 1 patient had vitiligo universalis. 64% of the patients had received a combination of systemic and topical treatment before.

Conclusion Our study provides an inight into the prevalence, socio-demographic factors and the various clinical parameters of vitiligo as well as their association with other autoimmune disorders. This study has also been compared with other studies conducted previously which shows the results of increased female preponderance, and generalised vitiligo being the most common subtype. In our study only 3% patients had positive family history which is less compared to other studies done previously.

Key words
Vitiligo, acrofacial, generalised, universalis, autouimmune, triggering factor.

Introduction

Vitiligo is a common acquired pigmentary disorder of the skin with a worldwide incidence of 0.1-2%. In India the incidence is about 0.5-2.5%.[1] Widespread prejudices, ignorance,

Address for correspondence
Dr. Prabal Samanta
Senior Resident,
Department of Dermatology, School of Tropical Medicine, Kolkata, India.
Email: prabalnbmc90@gmail.com

taboos, lack of scientific appraisal make it a social embarrassment for the patient. However, the life expectancy is unaffected. The pathogenesis of vitiligo is complex and multi-factorial. Genetic loci defining susceptibility to vitiligo have been also described and inheritance is usually polygenic. Several theories such as chemical and neural theories, autoimmune theories, melanocytorrhagy and altered redox status theory have been put forward to explain the patho-mechanisms involved but all of them have converged at the autoimmune destruction of melanocytes. The association of vitiligo with other autoimmune diseases such as type 1 diabetes mellitus, alopecia areata, autoimmune thyroiditis, pernicious anemia supports the pathogenesis. A thorough understanding of these mechanisms will help to identify new therapeutic targets. The diagnosis of vitiligo is mainly clinical; Wood's lamp and dermoscopy may aid in diagnosis in case of confusion. The differentials include other hypopigmented lesions of occupational, iatrogenic, infectious, neoplastic origin as well as chemical leukoderma, genetic syndromes, malformations, and postinflammatory hypopigmentation.

Vitiligo management is challenging and it is important to monitor the disease activity and response to treatment. Several scoring systems such as VASI (Vitiligo Area Scoring Index), VES (Vitiligo Extent scale), VETF(Vitiligo European Task Force), VIDA (Vitiligo disease activity) score have been put up for this purpose. Treatment consists of a combination of systemic and topical drugs as well as phototherapy and approach is individualised for each patient. Surgical options are also available.

The present study is conducted to know about the demographic and epidemiological profile of vitiligo and to study the various clinical types along with disease activity, associations and triggering factors for the disease in a tertiary care centre in Eastern India.

Methods

The clinico-epidemiological study was conducted over a period of 6 months ranging from 1st August, 2021 to 31st January, 2022 with an average footfall of 1000 patients per OPD. The study population comprised of consecutive patients attending the Dermatology OPD. A total of 100 patients were taken in the study. A written informed consent was presented to the patients followed by detailed history taking and clinical examination. The diagnosis of vitiligo was mainly clinical and a histo-pathological confirmation was done wherever applicable. All clinical types of vitiligo and patients willing to participate in the study have been included. Severely ill or pregnant patients, and those unwilling to participate in the study have been excluded. Other hypo-pigmented lesions mimicking vitiligo have been ruled out carefully.

The study variables included were age, sex, address, marital status, education and occupation for epidemiological analysis and age of onset, duration of disease, family history, triggering factors, association with autoimmune and systemic diseases, clinical type, treatment received and stability of the lesions have been included under the clinical aspect. The data collected was tabulated, analyzed and compared with existing literature.

Results

Of the 100 patients enrolled in the study, majority belonged in the age bracket of adolescents and young adults which comprised (48%) of the sample size (11-30 yrs.), while (13%) of the patients were less than 10 yrs. (12%) of them were more than 50 yrs., while (27%) of them were in the middle age of 30-50 yrs. Mean age of patients in our study was 28.4 years. (54%) of the study sample were females while (46%) were males. Out of them, (54%)

Table 1 Socio-demographic profile of vitiligo patients.

	Percentage of patients
Age	
0-10	13
11-20	29
21-30	19
31-40	13
41-50	14
51-60	08
>50 years	04
Sex	
Male	46
Female	54
Mean age of patients	28.4 years
Marital status	
Married	46
Unmarried	54
Educational status	
Illiterate	03
Primary	45
Secondary	14
Higher secondary	18
Higher education	17

were unmarried while (46%) were married.

In terms of educational status, majority had access up to primary education not completing the secondary exam (45%), followed by secondary education (17%), higher secondary education(18%), graduates and higher (17%) whereas (3%) of the sample were illiterate.

Majority (35%) of the subjects had onset in childhood (<12yrs), followed by middle age (24%) and adolescence (20%). Only (6%) had onset above 50yrs of age. Mean age of onset was 22.5 years. The duration of disease was between 1-10 years in most patients (58%) while it was less than a year in (28%) cases. Only 2% cases had duration of more than 30 years. Only (3%) cases had positive family history of vitiligo.

In majority (79%), there was no obvious triggering factor. Trauma came out to be the most common triggering factor accounting for (11%) cases while itching and medications were contributory in 4% and 2% cases respectively.

Table 2 Clinical profile of vitiligo patients.

	Percentage of patients
Age at onset(in years)	
0-12	35
13-19	20
20-30	15
30-50	24
>50	06
Mean age of onset	22.5 years
Duration of disease(in years)	
<1	28
1-10	58
10-20	08
20-30	04
>30	02
Family history	
Present	03
Absent	97
Type of vitiligo	
Focal	26
Segmental	09
Acro-facial	21
Generalised	41
Universalis	01
Mucosal	02
Triggering factors	
None	75
Trauma	11
Medications	2
Itching	4
Smoking	1
Tight clothes	1
Sour food	1
Make up	1
Association with autoimmune disease	
No	92
Yes	8
Treatment received	
Only Topical	25
Homeopathy	04
Oral steroid + Topical	64
Inj. Steroid + Topical	01
Phototherapy	04
None	02

Smoking, tight clothes, eating sour food and make-up were each reported in 1% of the patients as the triggering factor. The stability of the disease was assessed according to VIDA (Vitiligo Disease Activity Score) which showed that 50% of the patients had a score of (0) implying disease had been stable for more than one year.35 % patients had a score of (-1)

(stability of more than 1 year and spontaneous repigmentation), 6% had score of (+1) (disease stable for 6-12 months) while 9 % cases had (+2) score(stability of 3-6 months).

Most of the patients (87%) did not have any association with any other autoimmune or systemic diseases. Diabetes Mellitus and Hypertension/Coronary Artery Disease were the most common associations being (4%) each. Hypothyroidism was present in (3%) while urticaria, duodenal ulcer and hypercholesterolaemia each were present in (1%) of cases. Two patients had more than one association.

Generalized vitiligo was the most common subtype of vitiligo (41%) encountered in our study followed by acro-facial (21%), focal (26%), segmental (9%), mucosal (2%) types. Only 1 patient had vitiligo universalis.

As far as treatment is concerned, majority (64%) had received a combination of systemic and topical treatment, while (25%) had received only topical treatment previously. Approximately (4%) of the patients received phototherapy.

Discussion

Vitiligo is a common autoimmune de-pigmenting disorder due to progressive loss of melanocytes that has a profound impact on the

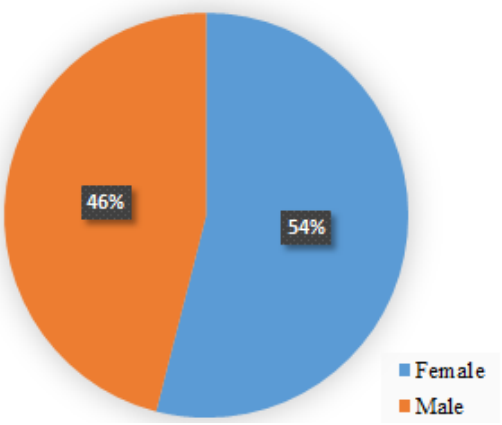

Figure 1 Male to female patients' ratio.

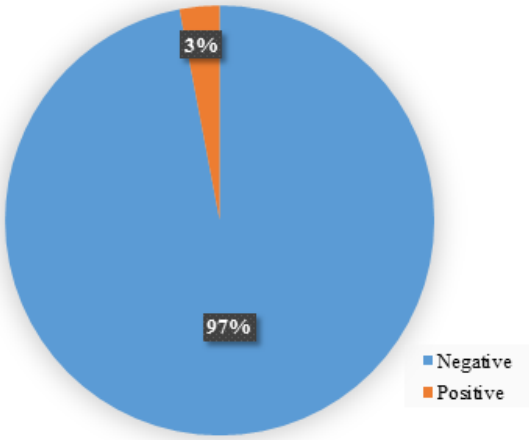

Figure 2 Family history.

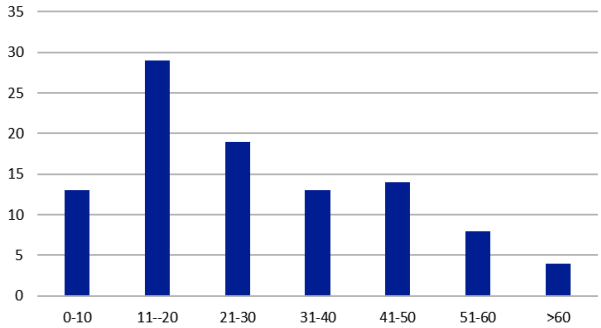

Figure 3 Distribution of patients in different age groups.

patients' quality of life and self-esteem. Clinically, it is characterised by amelanotic macules and patches, most commonly on sites most prone to trauma such as the hands, feet, elbows, knees and ankles.

There is no gender predilection as such and most patients develop lesions before 20 years of age. In case of age of onset, majority (35%) had onset in childhood, less than 12 years of age, followed by 24% who had onset in the middle age of 30-50 yrs. 20% had onset in the adolescence while only 6% had onset above 50 years of age.

Most of the studies show a female preponderance.[2,3] In our study, there was a female preponderance (54%) as well. This might be because of greater cosmetic awareness among females which results in them seeking treatment

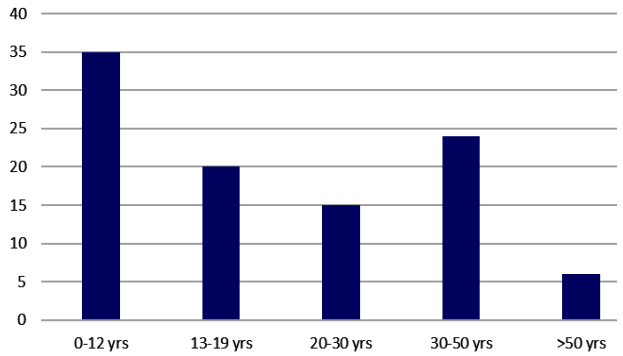

Figure 4 Distribution of patients according to the age of onset of disease.

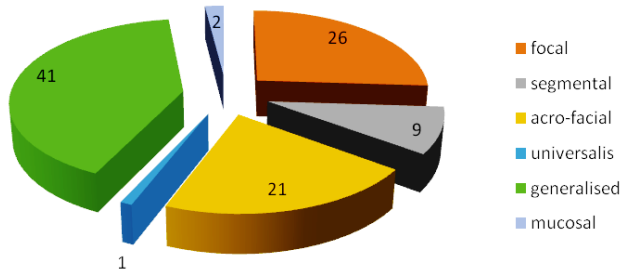

Figure 5 Distribution of patients according to the type of vitiligo.

earlier than their male counterparts. 97% of the patients were literate; most of them had completed primary education only (45%) and had significant misconceptions and superstitions about the disease. Only 3% of the cases had positive family history which is less as compared to earlier studies[4].Various studies have been done to determine the factors precipitating vitiligo like emotional stress, sunburn, major illnesses, surgical procedure, pregnancy, parturition and physical trauma[5]. In our study, triggering factors were noted in 21% of the patients, with trauma being the most common factor (11%).

11% of the patients had associations with other systemic diseases such as hypothyroidism, dyslipidemia, diabetes etc. which is less compared to a study conducted by Martis *et al.*[6] Atopic dermatitis, type 1 diabetes mellitus were some of the autoimmune disease associated in 8% cases.

Majority of the studies reported vitiligo vulgaris as the most common subtype of vitiligo.[2,6] The Vitiligo Global Issues Consensus Conference (VGICC) has classified vitiligo into Segmental, Non-segmental, Undetermined and rare types. In our study, the most common form of vitiligo reported was generalised (41%), followed by focal (26%) and acro- facial (21%) subtypes. The overall distribution pattern conformed to most of the studies in literature.

In our study, 50% vitiligo patients had a stability of more than 1 year and an additional 35 % had shown spontaneous repigmentation along with stability of more than one year. A Study conducted by Taneja *et al*. showed that the duration of both active and stable periods of vitiligo increased with the duration of disease with the period of stability being more than that of activity.[7]

Treatment of Vitiligo is quite challenging and has to be individualised for each patient. Various treatment modalities in the form of topicals (steroids, calcineurin inhibitors, vitamin D3 analogues), systemic agents (steroids, methotrexate, JAK inhibitors, azathioprine) and surgical procedures (punch and blister grafting, split thickness grafts) are available. Phototherapy [psoralen and UVA (PUVA) and NBUVB] is another important therapeutic option. Patients often have the perception that vitiligo is a disease that cannot be cured, but modern therapies have succeeded in inducing repigmentation in many cases. Many factors such as lack of compliance, financial conditions, quackery can influence the outcome of disease in vitiligo patients. In our study, a through history of past treatment history revealed that 98 % of patients had taken some form of treatment, out of which majority (64%) had received a combination of oral and systemic agents. This shows that most patients were aware of their condition and actively sought treatment for the

same.

Conclusion

This study provides an insight to the prevalence, clinical subtypes of vitiligo as well as the demographic profile of the patients, their access to available treatments in a tertiary care centre of Eastern India. The data conforms to many studies conducted in different parts of India and therefore will help in better understanding of the disease burden, social and cultural importance of vitiligo as a whole.

References

1. Khaitan BK, Kathuria S, Ramam M. A descriptive study to characterize segmental vitiligo. *Indian J Dermatol Venereol Leprol*. 2012;**78**:715-21.
2. Sarin RC, Kumar AJ. A clinical study of vitiligo. *Indian J Dermatol Venereal Leprol*. 1977;**43**:311-4.
3. Howitz J, Brodhagen H, Schwartz M, *et al*. prevalence of vitiligo. *Arch Dermatol*. 1977;**113**:47-52.
4. Koranne RV, Sehgal VN, Sachdev KG. Clinical profile of vitiligo in North India. *Indian J Dermatol Venereal Leprol*. 1986; **52**:81-2.
5. Dutta AK, Mandal SB. A clinical study of 650 cases of vitiligo and their classification. *Indian J Dermatol.* 1969; **14**:103-11.
6. Martis, Jacintha *et al*. A clinical study of vitiligo. *Indian J Dermatol Venereol Leprol*. 2002;**68(2)**:92-3.
7. Taneja, Neha; Sreenivas, V.1; Sahni, Kanika; Gupta, Vishal; Ramam, M. Disease Stability in Segmental and Non-Segmental Vitiligo, *Indian Dermatol Online J*. 2022;**13(1)**:60-3.
doi: 10.4103/idoj.IDOJ_154_21.