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Original Research Article

A study of vitiligo with other coexisting diseases in DVL department of a teaching hospital

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ABSTRACT

Background: Vitiligo is characterized by milky-white macules affecting the skin and mucous membranes. It occurs due to the progressive loss of functioning melanocytes from the affected areas. It may affect any age group and gender. Genetic, immunological, neural, and self-destructive mechanisms may be involved in its pathogenesis. Both autoimmune and non-autoimmune disorders have been reported to be associated with vitiligo.
Methods: This is a descriptive study conducted in the Department of DVL of a teaching hospital from August 2020 to November 2021. 50 vitiligo patients were enrolled in the study. Relevant data was recorded using the customized case proforma and analyzed.
Results: Majority of the patients belonged to the age group of 21-30 years (28%). Males (54%) outnumbered females. The mean duration of the disease was 51.6 months. The familial incidence of vitiligo was 18%. Majority of the cases were of vitiligo vulgaris type (50%). Koebnerization was seen in 20% and leukotrichia in 34% of the cases. 14% of cases had other coexisting cutaneous diseases. Urticaria (4%) was the most common followed by alopecia areata, acne, atopic dermatitis and psoriasis. 44% of the study population had systemic comorbidities. Iron deficiency anemia was the most common seen in 20% of cases followed by hypothyroidism, diabetes mellitus, dyslipidemia and hypertension.
Conclusions: A detailed history, comprehensive cutaneous and systemic examination, relevant laboratory workup is mandatory in a newly diagnosed patient with vitiligo. A regular follow-up and psychiatric evaluation is also necessary to reduce the disease burden.

Keywords: Vitiligo, Coexisting diseases, Leukotrichia

INTRODUCTION

Vitiligo is an acquired progressive disorder of the skin and mucous membranes characterized by well-circumscribed depigmented macules, which occurs secondary to selective destruction of melanocytes.[1]

The prevalence of vitiligo is approximately 1% among the world's population.[2] Vitiligo can arise at any age and both sexes are equally affected3. Different studies have reported a positive family history ranging from 11% to 46%.[4]

Vitiligo Global Issues Consensus Conference in 2011 has categorized vitiligo into segmental vitiligo (SV), non-segmental vitiligo (NSV), and mixed vitiligo (MV) based on clinical parameters.[5] NSV further includes different clinical subtypes, namely acrofacial, generalized, mucosal, and universal vitiligo. Many autoimmune and non-autoimmune disorders have been reported to be associated with vitiligo. These include cutaneous

disorders like alopecia areata, halo nevus, morphea, scleroderma, lupus erythematosus, lichen planus, psoriasis, and urticaria. Also, systemic disorders like diabetes mellitus, thyroid disease, pernicious anemia, rheumatoid arthritis, hypertension are associated with vitiligo.[6,7]
Vitiligo is known to have a detrimental impact on patients' quality of life and mental health.[8]

This study is aimed at observing the clinical presentation of vitiligo in patients attending a teaching hospital and also to assess the nature of coexisting diseases in patients with vitiligo.

METHODS

This is a prospective descriptive study conducted in the Department of DVL at a teaching hospital for a period of 16 months from August 2020 to November 2021. A total of 50 patients with vitiligo attending the DVL out patient Department of a teaching hospital during the study period were enrolled in the study. The nature of the study was explained to the subjects, and informed consent was taken. Demographics like age, sex, duration of disease, personal and family history were taken. Relevant history regarding other coexisting cutaneous and systemic diseases was taken. A thorough cutaneous, general physical, and systemic examination were done. The percentage of Body Surface Area (BSA) involved was calculated based on the rule of nine.

Various investigations were carried out including complete blood count (CBC), peripheral smear, thyroid profile, lipid profile, serum creatinine, electrocardiogram, fasting blood sugar (FBS), postprandial blood sugar (PPBS). Additional investigations were done as and when required. Descriptive statistics were used to present the data. Ethical clearance certificate was obtained from the institutional ethics committee.

RESULTS

In this study, majority of the patients belonged to the age group of 21-30 years (28%), followed by 31-40 years (20%), 11-20 years (18%), 41-50 years (16%), and 51-60 years (10%). 6% belonged to the age group of greater than 60 years and 2% belonged to less than 10 years age group. The age of the youngest patient was 9 years, and that of the oldest was 62 years. The mean age of the patients in this study was 32.53 years.

Out of the 50 patients with vitiligo in this study, males (54%) outnumbered females (46%), the sex ratio being 1.17:1.

The duration of disease was between 1-5 years among the majority of the study population (54%). The minimum duration was 1 month, and the maximum duration was 360 months. The mean duration was 51.6 months.

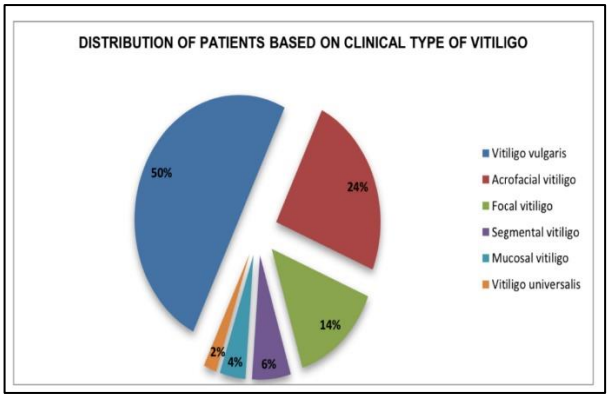

Figure 1: Distribution based on clinical type of vitiligo.

Table 1: Distribution of study population based on the coexisting cutaneous disease.

Co-existing cutaneous disease	Number of patients	Percentage
Urticaria	2	4
Alopecia areata	1	2
Acne	1	2
Atopic dermatitis	1	2
Psoriasis	1	2
Fungal infections	1	2
Number of coexisting cutaneous disease	43	86
Total	50	100

Table 2: Distribution of study population based on systemic comorbidities.

Systemic comorbidity	Number of patients		%
	Total	With comorbidity	
Iron deficiency anemia	50	10	20
Hypothyroidism	50	6	12
Diabetes mellitus	50	5	10
Dyslipidemia	50	4	8
Hypertension	50	1	2

Family history of vitiligo was present in 18% of the patients in this study. First-degree relatives were most commonly affected (10%), followed by second-degree relatives (6%) and third-degree relatives (2%).

The majority of the cases were of vitiligo vulgaris type (50%) followed by acrofacial vitiligo (24%), focal vitiligo (14%), segmental vitiligo (6%), mucosal vitiligo (4%), vitiligo universalis (2%). (Figure 1)

Koebnerization was seen in 20% of the study population. Leukotrichia was present in 34% of the cases in this study. 44% of patients with vitiligo had 11-50% of BSA

involvement, followed by 40% cases with less than or equal to 10% of BSA involvement, 14% of cases with 51-80% of BSA involvement, and 2% with greater than 80% of BSA involvement.

In this study, 14% of cases had other coexisting cutaneous diseases. Among the 14% of cases with coexisting cutaneous disease, urticaria (4%) was the most common manifestation, followed by alopecia areata, acne, atopic dermatitis, psoriasis, fungal infections, which constituted 2% each. (Table 1)

In this study, 44% of the study population had systemic comorbidities. Some patients had more than one systemic comorbidity. Iron deficiency anemia was the most common systemic comorbidity seen in 20% of cases, followed by hypothyroidism (12%). Diabetes mellitus was present in 10% of cases, while 8% of cases had dyslipidemia, and 2% had hypertension. (Table 2)

DISCUSSION

Vitiligo is a chronic persistent disorder that can be psychologically devastating, especially in dark-colored individuals, in whom it is more easily noticeable. Autoimmunity plays a significant role in the causation of vitiligo[9]. Many vitiligo patients have poor knowledge about the disease. Good history taking, cutaneous examination, and the judicious use of histopathology generally yield a straightforward diagnosis.

In this study, the majority of the patients were in the age group of 21-30 years (28%), followed by 31-40 years (20%).[10] According to the study by Dudeja et al the majority of the patients with vitiligo were in the age group of 21-30 years. Similar findings were seen in the study by Vora et al. where the most common age group was 21-30 years.[11] Thus the findings regarding the age group of patients with vitiligo in the present study were consistent with the studies conducted by Dudeja et al and Vora et al.

The mean age of the patients with vitiligo in the present study was 32.53 years. This is consistent with the findings in the study conducted by Shankar et al (32.40 years).[12]

In the present study, males (54%) outnumbered females (46%). The male to female ratio was 1.17:1. Gopal et al reported more males (54%) than females (46%) in their study.[13] The male to female ratio was 1.17:1. Shankar et al reported more males (51.25%) than females (48.8%) in their study while Shah et al in their study reported more females (68.4%) than males (31.6%).[12,14] The gender distribution of patients in the present study was consistent with the studies conducted by Gopal et al and Shankar et al.

The duration of vitiligo in this study was in the range of 1 month to 360 months. In a study conducted by Gopal et al duration of vitiligo was in the range of 0.5 months- 372 months, while in the study conducted by Shankar et al12 the duration of vitiligo was in the range of 0.5 months-720 months.[13]

The mean duration of vitiligo in the present study was 51.6 months, which was similar to the findings in the study by Shankar et al (46.9 months).[12] It was more when compared to that seen in the study by Gopal et al (43.2 months) and less when compared to that seen in the study by Mahajan et al (61.2 months).[13,15]

The familial incidence of vitiligo in the present study was 18% which was consistent with the findings in the studies conducted by Altaf et al (17.7%) and Shankar et al (20%).[12,16]

First-degree relatives were most commonly affected in the present study (10%), followed by second-degree relatives (6%) and third-degree relatives (2%) similar to the study conducted by Shankar et al where first-degree relatives were most commonly affected (8.75%), followed by second-degree relatives (7.5%) and third-degree relatives (3.75%).[12]

In the present study, majority of the cases were of vitiligo vulgaris type (50%). It was similar to the findings reported in the studies conducted by Shajil et al (52.36%), Gopal et al (48%), and Behl et al (47.5%).[13,17,18] The incidence of vitiligo vulgaris type in this study was much higher than that seen in the study by Shankar et al (31.3%).[12] Acrofacial type of vitiligo was seen in 24% of cases in this study, which was similar to the findings reported in the studies conducted by Gopal et al (22.66%), and Alzolibani et al (26.1%).[13,19] Focal type of vitiligo was seen in 14% of cases in this study, which was similar to the findings reported in studies by Altaf et al (14.6%), Gopal et al (16%), and Shankar et al (18.8%).[12,13,16] Segmental vitiligo was seen in 6% of cases in this study, which was similar to the findings reported in the studies by Shajil et al (6.84%) and Behl et al (5.3%).[17,18] Mucosal vitiligo was seen in 4% of cases in this study, which was similar to the findings reported in the study by Behl et al (5.6%).[18] Vitiligo universalis was seen in 2% of cases in this study, which was similar to the findings in the study by Shajil et al (1.88%).[17]

The incidence of koebner's phenomenon in this study was 20%, which was similar to the findings in the study by Mutairi et al (16.75%).[20] The incidence of leukotrichia in this study was 34%, which was similar to the findings in the studies by Aydin et al (33%) and Mahajan et al (32.7%).[15,21]

Various cutaneous diseases were seen in patients with vitiligo in this study. Urticaria was seen in 4% of cases with vitiligo in this study which was greater than that seen in the study by Garg et al (1.5%).[22] Alopecia areata was seen in 2% of cases in this study which was consistent with the findings seen in the studies conducted

by Koranne et al (2.66%) and Vora et al (1.9%).[11,23] Psoriasis was seen in 2% of cases with vitiligo in this study. Garg et al reported psoriasis in 2.5% of patients with vitiligo in their study which was consistent with the findings seen in the present study.[22] The incidence of psoriasis in this study was higher than that seen in Vora et al (0.4%) and lower than that seen in the study by Mahajan et al (13.79%).[11,15] Atopic dermatitis was seen in 2% of cases with vitiligo in the present study similar to the findings in the study by Martis et al (2%).[24] The fungal infection seen in this study was tinea corporis, which was seen in 2% of cases in this study. The incidence of fungal infections in this study was similar to that seen in the study by Vora et al (1.3%). Acne was seen in 2% of cases with vitiligo in this study.[11]

The most common systemic comorbidity seen in this study was iron deficiency anemia present in 20% of cases with vitiligo, followed by hypothyroidism (12%). Diabetes mellitus was present in 10% of cases, while 8% of cases had dyslipidemia, and 2% had hypertension.

Iron deficiency anemia was seen in 20% of cases in the present study which was similar to that seen in the study by Gopal et al (20%).[13] The thyroid disorder seen in this study was hypothyroidism. It was seen in 12% of cases in this study, which was similar to the findings in the study by Fatani et al (12.6%).[25] Diabetes mellitus was present in 10% of cases in this study, which was similar to the findings in the studies by Fatani et al (9.6%), Martis et al (9%), and Mahajan et al (11.2%). 8% of cases had dyslipidemia in this study.[15,24,25] Hypertension was seen in 2% of cases in this study, which was similar to the findings reported in the studies by Vora et al (1.7%), Shah et al (1.37%).[11,14]

CONCLUSION

Majority of the patients presented with vitiligo in the third decade of life. Vitiligo affected both males and females with a slight male preponderance. The presence of family history indicates that genetic factors play a role in the etiology of vitiligo and may also lead to the early onset of vitiligo. The activity of the disease can be established with the presence of koebnerization. Vitiligo patients with leukotrichia have a bad prognosis and respond poorly to treatment. Various cutaneous and systemic diseases may be present in patients with vitiligo. They may be autoimmune or non-autoimmune. The findings in this study are in concordance with other studies. Thus a detailed history, thorough examination, and relevant laboratory investigations are required for the workup of vitiligo. Creating awareness about the disease and psychiatric counseling is mandatory among newly diagnosed patients.

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