

Association of other Autoimmune Diseases in Vitiligo Patients

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Abstract

A cross sectional study of thirty eight vitiligo patients attending at the outpatients was conducted. The result revealed generalized presentation in 53.6% cases followed by focal presentation, acro-facial and segmented presentation which were 26.3% cases, 15.8% cases and 5.3% cases. Progressive type was found in majority of cases which were 71.1% cases followed by stable case which was 39.9% cases and positive family history was found in 36.8% cases in our study. Among 38 vitiligo patients highest number of associated autoimmune disease was the thyroid abnormalities of which hypothyroidism was 15.8% and hyperthyroidism was 7.9% cases respectively. Diabetes mellitus was found in 2.6% cases, Addison's disease and SLE were found in 2.6% case each. No autoimmune disease was found in the rest 68.5% cases.

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Introduction

Vitiligo is an acquired, idiopathic, hypomelanotic disease characterized by circumscribed depigmented macules¹. It is a disfiguring disease with psychosocial stigma due to the chronic and progressive loss of melanocytes from the cutaneous epidermis². In India there is a stigma associated with vitiligo and affected persons and their families particularly girls are socially ostracized for marital purpose³. Large population surveys have shown a world-wide incidence of 0.5–2%, with the disease beginning before the age of 20 in 50% of cases⁴. About 6–38% of patients have family members with the disease indicating hereditary factor⁵. However, the inheritance pattern of the disorder is consistent with that of a polygenic trait not transmission by a simple Mendelian mechanism². Usually, vitiligo is viewed as a minor disease, but the impact on patients' psychological well-being and social interactions should not be underestimated⁶. Autoimmunity might arise as a secondary phenomenon

following the self-destruction of pigment cells and this might then amplify the damage to melanocytes². Indeed, non-segmental vitiligo is characterized by an association with autoimmune disease and unstable results after autologous melanocytes grafting⁷. Vitiligo is often associated with other autoimmune conditions².

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Moreover, in a survey of more than 2600 unselected Caucasian vitiligo patients, elevated frequencies of autoimmune thyroid disease, Addison's disease, systemic lupus erythematosus and pernicious anaemia were found, with approximately 30% of patients being affected with at least one additional autoimmune disorder⁸ Furthermore, these same autoimmune diseases occurred at an increased frequency in the first-degree relatives of the patients studied. Similarly, in multiplex generalized vitiligo families, higher frequencies of psoriasis, rheumatoid arthritis and type 1 diabetes mellitus were noted in addition to autoimmune thyroid disease, Addison's disease, systemic lupus erythematosus and pernicious anaemia⁹. Such data indicate that individuals can be genetically predisposed to a specific group of autoimmune diseases that includes generalized vitiligo². In contrast to the studies, one notable large-scale analysis of 321 vitiligo patients found associations with thyroid disease but not with any other autoimmune disease¹⁰. The purpose of the present study was therefore destined to find out the association of vitiligo with any autoimmune diseases.



Picture 1: showing vitiligo affected area on forehead of a middle aged women.



Picture 2: showing vitiligo affected area on right thigh of a young man..



Picture 3: showing vitiligo affected area on right forearm and arm of a young boy.



Picture 4: showing vitiligo affected area on posterior aspect of both leg of a young boy.



Picture 5: showing vitiligo affected area on scalp region of an old man.

Methods

A cross sectional study was carried out in clinically diagnosed cases of vitiligo patients of any age and both sexes. The patients were voluntarily included in the study taking their consent and they were neither supported nor additionally burdened financially. A total number of 38 patients were enrolled for this study after fulfilling inclusion and exclusion criteria. Inclusion criteria: patients were with localized or generalized vitiligo confirmed clinically & by wood's lamp examination, at any age with both sex. Exclusion criteria: patients those suffering from systemic diseases like chronic arsenicosis, cirrhosis of liver or ectopic hormone secreting tumour, the cases showing white patches due to secondary causes, pregnant women and lactating mothers, severely ill patients and patients or attendants unwilling to take part in the study. The sampling technique was accidental or convenient type.

Study Procedure

An informed consent was taken from the patient who was taken part in this study. For data collection, structured questionnaire and case record proforma were used. At the base line visit, the questionnaire & case record proforma were used to collect data of the respondents, socio-economic factors, family and community status, personal history, disease type and length of time present including known autoimmune disorders. Patient were diagnosed clinically by assessing morphology of lesion, their distribution, percentage of skin involved and by doing woods lamp examination. All data were compiled and edited meticulously by thorough checking and rechecking. These were recorded systematically in preformed data collection form (questionnaire) and quantitative data was expressed as mean and standard deviation and qualitative data was expressed as frequency distribution and percentage. Statistical analysis was performed by using SPSS for windows version 12.0 and 95% confidence limit was taken. Probability value <0.05 was considered as level of significance.

Results

The demographic analysis showed among patients female sex is preponderant (52.6%) in comparison to males (47.4%). The distribution of patients according to marital status represented that the majority is unmarried (55.3%) and the rest are married (44.7%). The result of the questionnaire further revealed the socio-economic status of patients. It is remarkable that vitiligo patients mostly belong to middle class (60.5%) followed by lower and upper class statuses showing the distribution of patient 36.9% cases and 2.6% cases respectively. The analysis noticed further the distribution of patient according to occupation. It was ascribed to students which is 36.8% as majority of cases, followed by service holder, housewife, other occupations and business which are 23.7% cases, 15.8% cases, 15.8% cases and 7.9% cases respectively. Regarding smoking habit among 38 patients non-smokers were found more in numbers than smokers which are recorded as 84.2% and 15.8% cases respectively.

Table 1 represents the distribution of patients according to presentation of vitiligo. Generalized presentation is found in 53.6% cases followed by focal presentation, acro-facial and segmented presentation which is 26.3% cases, 15.8% cases and 5.3% cases. Table 1 shows the distribution of patient according to clinical progression also. Progressive type is found in majority of cases which is 71.1% cases followed by stable case which is 39.9% cases. This table also demonstrates the distribution of patients according to family history. Positive family history is found in 36.8% cases and the rest 63.2% cases are absent. Some photographs of patients under this study show the appearance of vitiligo at different sites.

Table 1: Distribution of patient according to presentation and clinical progression and Family History of vitiligo (n=38).

Presentation of vitiligo	Frequency	Percent
Focal	10	26.3
Segmental	2	5.3
Generalized	20	53.6
Acrofacial	6	15.8
Total	38	100.0

Clinical progression	Frequency	Percent
Stable	11	28.9
Progressive	27	71.1
Total	33	100.0

Family History	Frequency	Percent
Present	14	36.8
Absent	24	63.2
Total	38	100.0

Figure I shows association of diseases with vitiligo. Among 38 vitiligo patients highest numbers of patients were associated with autoimmune diseases. In these diseases the thyroid abnormalities in the form of hypothyroidism is 15.8% and hyperthyroidism in 7.9% cases were found respectively. Diabetes mellitus is found in 2.6% cases. Addison's disease and SLE are evidenced in 2.6% case each. No autoimmune disease is found in the rest 68.5% cases.

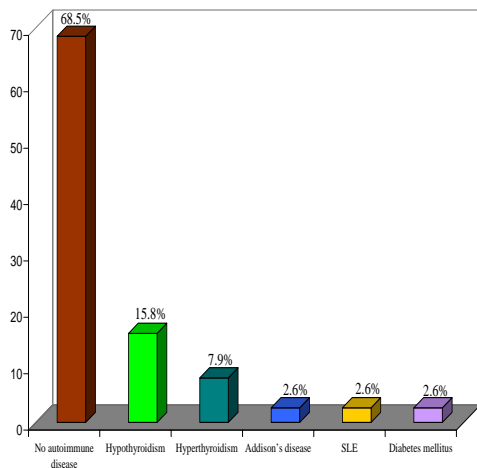


Figure I: Bar diagram showing association of diseases with vitiligo

Discussion

A total number of thirty eight vitiligo patients were selected in this study. The distribution of patient according to sex revealed male: female ratio as 1:1.1 which indicates that the vitiligo is more common in female. This finding is similar with Narita et al.¹¹ The reason is thought to be due to estrogens driving the autoimmunity^{12, 13}.

It has been found that the students are most commonly affected by vitiligo followed by service holders and house wife. This phenomenon is due to the fact that the students are more concern about such illness. The present study depicts the fact that vitiligo has little impact on smoking predominantly yielded vitiligo. There raises a question whether it proves the fact that females are more commonly affected with vitiligo than males, as they are mostly non-smokers. The distribution of patients according to family history is recorded. It is very common among those who have positive family history (36.8%). Poojary reported that increased frequency of autoimmune diseases has also been specifically described in family members of multiplex vitiligo families and families with multiple members having vitiligo which is similar with the present study¹⁴. This indicates that the vitiligo is reflecting an inherited genetic component of autoimmune susceptibility in these families. Laberge et al also has also tried to find out the relationship between vitiligo and the history of family members and has found a similar result⁹.

The association of other diseases with vitiligo is remarkable. Among all vitiligo patients highest number of associated autoimmune disease is the thyroid abnormalities of which hypothyroidism (15.8%) is more common than hyperthyroidism (7.9%). Type 1 Diabetes mellitus (2.6%) is found among the study population. Addison's disease and SLE are found in 2.6% case each. Similarly Cunliffe et al found that there is a significant association between vitiligo and thyroid disease¹⁵. The study also mentioned that thyroglobulin antibodies are significantly associated with vitiligo. Poojary reported

that alopecia areata and diabetes mellitus are also significantly associated with vitiligo which is similar with the present study¹⁴. In another study Alkhateeb et al reported that at least 30% of patients with vitiligo are to be affected with at least one additional autoimmune disorder⁸. This agreement is analogous to the present study. The present study evidenced that the commonest association of vitiligo is with thyroid dysfunction. Dave et al reported abnormal thyroid profile in vitiligo patients and also higher incidence of thyroid dysfunction in mucosal vitiligo¹⁶. Studies by Zettining et al. reported subclinical thyroid disease and Betterle et al reported only the presence of anti-thyroid peroxidase antibodies, thyroid microsomal antibodies and antithyroglobulin antibodies^{17,18}. All these findings when compared with other studies have shown that there is a strong relationship with the autoimmune diseases with vitiligo.

Conclusion

In conclusion, it may be drawn that the findings of this study clearly demonstrated and supported an association between autoimmune diseases with vitiligo of which thyroid diseases, Addison's disease, systemic lupus erythematosus, alopecia areata, type 1 diabetes mellitus are worth mentioning. While examining a vitiligo patient the clinicians should give proper attention keeping in mind this above mentioned association for getting information prior to selecting a suitable therapy.

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