

Original Research Article

The study on association of co-morbidities in female patients with vitiligo

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ABSTRACT

Background: Vitiligo is an acquired pigmentary disorder of skin characterized by the presence of depigmented patches and macules. Vitiligo has been found to be associated with certain autoimmune diseases like diabetes and hypothyroidism. This study is done to evaluate the association of certain co-morbidities with vitiligo in female patients. The aim of the study was to assess the association of vitiligo with co-morbidities in female vitiligo patients and to find the familial association.

Methods: Retrospective hospital-based study done over a period of 6 months.

Results: In this study series of 75 cases, 19% of cases were associated with hypertension, 25% were associated with diabetes mellitus, 15% were associated with hypothyroidism and positive family history was noted in 17% patients. The mean age of presentation was 43.18.

Conclusions: We found a high association of co-morbidities among female patients with vitiligo. In our study, diabetes has been found to be more commonly associated with vitiligo than other comorbidities. Hence screening for co-morbidities should be considered in vitiligo patients.

Keywords: Vitiligo, Females, Co-morbidities

INTRODUCTION

Vitiligo is an acquired pigmentary disorder of the skin. It is due to autoimmune destruction of melanocytes and clinically presents with depigmented patches and macules.¹ It can be generalized vitiligo, localized or segmental.² The worldwide prevalence of vitiligo is 0.5% – 4%.³

Various factors contributing to its pathogenesis include autoimmune, genetic, neural, viral, biochemical and autotoxic mechanisms. Multiple genes associated with expression of this phenotype include SMOC2 variant (rs13208776) and NACHT – leucine-rich repeat

protein (NALP1).⁴ Melanogenesis can be interfered by ROS and excess H₂O₂.⁵

Since autoimmunity has been established in the pathogenesis of vitiligo, multiple autoimmune disorders can co-exist.^{6,7} Thyroid disorders and other Endocrinopathies such as Addison's disease, diabetes mellitus, alopecia areata, pernicious anemia, inflammatory bowel diseases, psoriasis, and autoimmune polyglandular syndrome are associated with vitiligo.⁸

Aim

This study was conducted to assess the clinical pattern of vitiligo along with the association of co-morbidities in female patients attending our OPD.

METHODS

This study is a retrospective study conducted in the outpatient department of Dermatology in a tertiary health care center over a period of 6 months from January 2018 to June 2018. The study population included 75 new female patients with vitiligo attending our OPD.

Inclusion criteria

Female vitiligo patients attending our OPD irrespective of age.

Exclusion criteria

Leukoderma secondary to contact dermatitis and other post inflammatory depigmentary disorders.

Female patients of all age groups who were willing to be included in this study were enrolled. The diagnosis was by clinical examination and biopsy was done for doubtful cases. Informed consent was obtained from all patients who were included in the study. Clinical history was obtained in detail including the history of the presence of vitiligo in siblings and parents. Patients were subjected to investigations including complete blood count, fasting and postprandial blood sugar and thyroid profile. The data collected were analyzed.

RESULTS

The study included 75 female patients with vitiligo attending the OPD of Dermatology in a tertiary care hospital. The mean age of presentation was 43.18 with the standard deviation of 17.34, the youngest being 3 years and oldest 70 years. The mean duration of vitiligo was 6.11 years, the shortest being 6 months.

Table 1: Age distribution.

Parameters	Values
Age (years)	5-65
Mean age (years)	43.18
Duration of disease (years)	0.6 – 10
Mean duration (years)	6.11

Table 2: Family history.

Parameters	Percentage (%)
Family history	17
First degree	8.75
Second degree	6.15
Third degree	1.1

The commonest type encountered was the generalized type (39%) followed by segmental type (36%), acrofacial vitiligo (15%), and mucosal type (10%). Among the 75 female patients enrolled, 17% of patients presented with a positive family history. Among the affected family

members, 8.75% were first degree relatives. The most common co-morbidity associated with vitiligo in this study was diabetes mellitus (25%) which was followed by hypertension (19%) and hypothyroidism (15%).

Table 3: Clinical types of vitiligo.

Types	Percentage (%)
Generalized	39
Segmental	36
Acrofacial	15
Mucosal and others	10

Table 4: Association with co-morbidities.

Co-morbidities	Percentage (%)
Diabetes	25
Hypertension	19
Hypothyroidism	15

DISCUSSION

Vitiligo is an acquired autoimmune mediated pigmentary disorder of skin due to autodestruction of melanocytes in the epidermis. The presence of immune response genes and target organ-specific genes determine the occurrence of vitiligo.⁹ Though vitiligo does not alter the expectancy of life or working capacity of the patient, it produces psychological trauma to the patient.¹⁰ In this way, it affects the quality of life of the patient.¹¹

Both the sexes are affected equally. Vitiligo occurs earlier in those with positive family history.¹² In addition to the autoimmune hypothesis, neurohumoral, cytotoxic and oxidative stress theories have been postulated in the pathogenesis of vitiligo. HLA DR4, A2, DR7, DQB10303 have been frequently found to contribute to the susceptibility of vitiligo.¹³ Also, NACHT and NALP1 have been identified as susceptibility genes especially in generalized vitiligo associated with other autoimmune diseases.¹⁴

There is an increased incidence of association with autoimmune disorders in generalized vitiligo patients with a positive family history.¹⁵

Up to 7% of vitiligo patients have IDDM while 4.8% of diabetic patients have vitiligo. In chronic diabetics, there is an injury to the melanocytes which causes the release of antigenic substances, anti melanocyte antibody production or inhibition of melanogenesis and thus result in vitiligo.¹⁶

The association was highest with diabetes mellitus followed by thyroid disorders. Such associations reiterate the fact that vitiligo shares a common genetic link with these autoimmune disorders.

The mean age of the study population being 43.18 explains the association with hypertension. 17% of cases

presenting with positive family history suggest major genetic component in disease pathogenesis.

CONCLUSION

Our study suggests that more than 50% of female vitiligo patients had associated co-morbidities. Among the co-morbidities, the majority had diabetes mellitus compared to thyroid disorders. Diabetes and hypertension were more prevalent as the mean age of the study population were 43.18. It is hence mandatory to screen for diabetes, hypertension and thyroid disorders in vitiligo patients.

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Ethical approval: The study was approved by the institutional ethics committee

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