

## Original Article

## Profile of Vitiligo in Farwaniya Region in Kuwait

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## ABSTRACT

**Background:** Vitiligo is common worldwide. However, there are few studies available on pattern and epidemiology of vitiligo from the Gulf countries, including Kuwait.

**Objective:** To determine the clinical patterns of Vitiligo, the associated socio-demographic factors and its associated disorders among patients attending dermatology outpatient department of Farwaniya hospital in the central region of Kuwait.

**Materials and methods:** All patients presenting with signs and symptoms suggestive of vitiligo seen over a period of one-year (from July 2003 to June 2004) at the out-patient clinics in the Dermatology Department of Farwaniya Hospital and two affiliated dermatology clinics in Kuwait were included in the study. Socio-demographic details about age, sex, marital status, education, occupation, and nationality were recorded on a proforma. A detailed clinical history pertaining to the presenting complaint and clinical examination findings were noted on the same proforma. Relevant available investigations were carried out in all the patients depending on their signs and symptoms to determine any associated disorders with vitiligo.

**Results:** Four hundred and forty-eight adult patients, 76 adolescents and 88 children with vitiligo were studied. Males constituted 257 (42%) patients and females 355

(58%) of the total number of patients. Duration of disease at the time of presentation ranged from two weeks to 12 years. The lower limb was the initial site of onset of vitiligo in majority (32.19%) of the patients, followed by the upper limbs, head and neck, trunk and mucosae in decreasing order of frequency. The commonest clinical pattern observed was vitiligo vulgaris followed by focal, acrofacial, mucosal, segmental and universal types. Lesions showing leukotrichia were observed in 144 (23.53%) patients and koebnerization was observed in 141 (23%) patients. Seven child patients with halo nevi were seen. Associated abnormalities included atopic dermatitis (49 patients), alopecia areata (21 patients), psoriasis (2 patients), diabetes mellitus (9 patients) and 13 patients showed anti-thyroid antibodies. A positive family history was obtained in 8.98% of the patients.

**Conclusion:** Vitiligo vulgaris is the most common clinical-type skin disorder observed in Kuwait. There were associated disorders/abnormalities in some patients such as atopic dermatitis, alopecia areata, psoriasis, and diabetes mellitus. Keeping in view the observation of anti-thyroid antibodies in some of these patients we suggest that patients having these antibodies should be followed up for the possible development of clinical thyroid dysfunction.

KEY WORDS: associated disorders, clinical profile, vitiligo

## INTRODUCTION

Vitiligo is an acquired, pigmentary disorder of the skin and hair characterized by well-circumscribed, asymptomatic white cutaneous macules devoid of identifiable melanocytes. It affects 0.1 - 4% of the population worldwide<sup>[1]</sup>. Vitiligo occurs in all races, affects both sexes, and can develop at any age.

Vitiligo is a common depigmentation disorder of the skin. The destruction of melanocytes is the cause of depigmented maculae that clinically represent the disease vitiligo<sup>[2,3]</sup>. The premise that vitiligo, or a susceptibility to the disease, is inherited is based on the fact that familial aggregation is often seen. Theories concerning the cause of vitiligo have concentrated on three different mechanisms: autoimmune, autocytotoxic, and neural.

The disorder has been reported in association with several endocrinopathies and other disorders of autoimmune nature<sup>[4]</sup>.

## MATERIALS AND METHODS

Farwaniya Hospital is a secondary care hospital serving a sizeable population of Kuwait. This was a prospective study and the data were collected between July 2003 and June 2004. All new patients with vitiligo were included in this study. The diagnosis was made by experienced dermatologists and was essentially clinical.

A complete history regarding age, family history, site of onset, duration, and past treatment was taken. A thorough clinical examination was done, and the site and pattern of the lesions were

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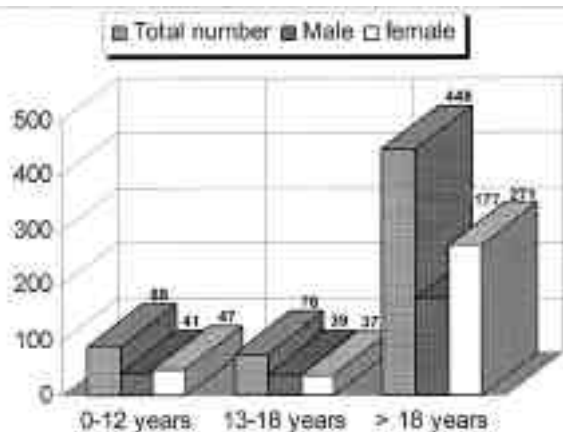


Fig. 1: Age at onset of vitiligo

noted as was the activity of the disease as evidenced by the appearance of new lesions and increase in the size of existing lesions over the past six months. The cases were classified into six groups according to the standard working classification of clinical types of vitiligo<sup>51</sup>. Presence of leukotrichia, Koebner phenomenon, and halo nevi were noted. Screening was also done for autoimmune and endocrine disorders by history and clinical examination; these disorders included thyroid disease, diabetes mellitus, pernicious anemia, Addison's disease, connective tissue diseases and alopecia areata. Investigations including hemoglobin level, total and differential leukocyte counts, erythrocyte sedimentation rate, peripheral smear, blood sugar level, T3, T4, TSH, anti-thyroid antibodies (antithyroglobulin and antimicrosomal antibodies) and fluorescent antinuclear antibodies were done for all patients.

## RESULTS

Out of 37, 246 new patients examined, 612 new patients were diagnosed as having vitiligo (1.64%). Out of these, there were 448 adults (>18 years), and 164 children and adolescents.

The total number of males with vitiligo was 257 (42%) and the total number of females with the disease was 355 (58%) as shown in Fig. 1. The duration of the disease at the time of presentation ranged from 15 days to two years.

According to the age of onset, patients were divided into three groups: children (< 12 years), adolescents (13-18 years), and adults (> 18 years) as shown in Fig. 1.

The number of patients with active disease (appearance of new lesions or increase of the size of existing lesions within six months) was 489 (79.90%). Koebner phenomenon was found in 141 patients (23%) of the total vitiligo patients and 123 (87%) of them had active disease.

Table 1: Number of patients with positive family history

Type of patients	Number
Children	24
Adolescents	16
Adults	76
Total	116

The number of patients with positive family history was 116 (18.95%). These are summarized in Table 1.

The site of onset of vitiligo lesions in patients is shown in Table 2. The most common site of onset was lower limbs followed by, upper limbs, head and neck, trunk, genitalia and mucosae. Halo nevi were seen in seven patients; all of them were children and had non-segmental vitiligo. Lesions of vitiligo showing leukotrichia of the overlying hair in hair bearing areas were observed in 144 (23.53%) patients.

The distribution of vitiligo in patients is shown in Table 3. The distribution pattern of lesions which denotes the clinical types of vitiligo is shown in Table 4. Vitiligo vulgaris (generalized vitiligo) showing scattered circumscribed macular depigmented lesions was the most common type, followed by focal, acrofacial, mucosal, segmental, and universal types. All cases with mucosal vitiligo were girls, having involvement of the genital mucosa. Out of the 26 cases with segmental vitiligo, 15 cases had vitiligo involving the face.

Patients with vitiligo having other associated conditions are summarized in Table 5. Thirteen patients had anti-thyroid antibodies but none of these patients had clinical evidence of thyroid disease. Insulin dependent diabetes mellitus was seen in nine patients. Alopecia areata was seen in 21 patients and atopic dermatitis was observed in 49 patients.

No patient complained of deafness. Ocular examination failed to reveal any abnormality in any of the patients.

## DISCUSSION

Many studies indicate that vitiligo is mostly acquired early in life. However, our study shows that a sizeable number of patients (448 out of 612 new patients) have their onset of vitiligo after the age of 18.

Female preponderance was observed in our study. Kovacs<sup>51</sup> also referred to a preponderance of females among patients with vitiligo. However, he also pointed out that this observation is not statistically significant. In a study on Indian patients, Handa and Kaur stated that 54.5% of cases were men<sup>61</sup>. Alkhateeb *et al* in a recent study from

**Table 2:** Site of onset of vitiligo

Site of onset	Number of cases	Percentage
Head and neck	110	17.97
Trunk	100	16.35
Lower limbs	197	32.19
Upper limbs	157	25.65
Mucosa & genitalia	48	7.84
Total	612	100

USA have noted that the frequency of vitiligo appeared approximately equal in males and females<sup>[7]</sup>. We feel that the observed female preponderance in our cases is presumably for two reasons; first, the higher cosmetic concern among female patients and the relatively more time they have for long-term therapy allowing them to seek active treatment more often; and second, males being bread earners in contemporary society, must work all day long throughout the year and this makes them relatively unconcerned or so busy to consult for the treatment of vitiligo

In our study children constitute 14.4% of the total number of vitiligo patients, which is comparatively less than that was reported in other studies. Nanda *et al* highlighted the spectrum of cutaneous diseases seen in children in Kuwait and they pointed out that the incidence of vitiligo showed a steady increase from 0.4% in infants to 1% in preschool children, 2.1% among primary school children and 3.5% in preadolescents<sup>[8]</sup>.

Hann *et al* reported that family history was present in 13% of their patients<sup>[9]</sup>. In a study from India by Handa and Kaur, 11.5% of patients had a family history of vitiligo<sup>[6]</sup>. In our study, a positive family history was present in 18.95% of the patients. We believe that genetic factors are playing a role in this part of the world as there is a high incidence of consanguineous marriage here.

The lower limbs were found to be the site initially developing depigmentation in the majority of our patients, followed by upper limbs, head and neck, trunk and the mucosae. Handa and Kaur<sup>[6]</sup> reported that sites of onset were the face, trunk, and legs in descending order of frequency. The exact significance of this observation is difficult to appreciate. However, we feel that trauma prone sites like the lower legs and the hands may develop vitiligo lesions more easily in genetically predisposed persons and may be the sites of onset of disease more often.

Generalized vitiligo (vitiligo vulgaris), characterized by multiple, bilateral, symmetrical lesions involving upper and lower limbs and trunk, was the most commonly seen clinical type in our patients. This was followed by focal vitiligo, acrofacial vitiligo, mucosal vitiligo, segmental

**Table 3:** Distribution of vitiligo in patients

Distribution	Number of cases	Percentage
Exposed areas	484	79.1
Unexposed areas	119	19.5
Exposed & unexposed areas	9	1.47
Total	612	100

vitiligo and universal vitiligo types. Hann *et al* broadly classified their patients as having segmental or non-segmental vitiligo and observed non-segmental vitiligo in 79.5% of their patients<sup>[9]</sup>. Kovacs also reported that generalized vitiligo is the commonest presentation<sup>[5]</sup>. Handa and Kaur reported that vitiligo vulgaris was the commonest type seen followed by focal vitiligo and segmental vitiligo<sup>[6]</sup>. However, with the present state of our knowledge it is difficult to comprehend the mechanisms and determinants underlying varying clinical patterns of vitiligo seen in different patients.

Many lesions in hair bearing areas show leukotrichia of the overlying hair and such lesions were seen in 144 (23.53%) of our patients. Leukotrichia was seen in 43.5% of South Korean patients<sup>[9]</sup> and in 11.5% of Indian patients<sup>[6]</sup>. Koebnerization was observed in 23% of our patients. Others have reported it in 21%<sup>[9]</sup> and in 5%<sup>[6]</sup> of their patients respectively.

Halo nevi were seen in seven patients; all had non-segmental vitiligo and were children. None of the adult patients showed halo nevi. This constituted 7.95% of the studied children. Halo nevi were seen in only 2.5% of the children in the study from Korea<sup>[10]</sup> while Handa *et al*<sup>[11]</sup> observed halo nevi in 4.4% of the children. However, our observation is consistent with the observation of Cho *et al*<sup>[10]</sup> in that all patients with halo nevi had non-segmental vitiligo. We believe that halo nevi co-existing with vitiligo lesions are not commonly seen in adult-onset vitiligo.

Association of vitiligo with other diseases/abnormalities has also been a subject of great interest. We also observed an association of vitiligo with cutaneous diseases like atopic dermatitis (49 patients), alopecia areata (6 patients), psoriasis (2 patients), and, with systemic disorders like diabetes mellitus (9 patients). Anti-thyroid antibodies were detected in 13 patients (all asymptomatic for thyroid dysfunction). Handa and Kaur<sup>[6]</sup> observed atopic/nummular eczema in 1.4%, alopecia areata in 0.4%, bronchial asthma in 0.7%, diabetes mellitus in 0.6% and thyroid disease in 0.5% of their patients. We feel that the significant number of atopic dermatitis patients having vitiligo in our study merely expresses the high prevalence of atopic dermatitis observed in the general population in Kuwait<sup>[8]</sup>. We should mention here an

**Table 4:** Agewise percentage of the pattern of distribution of vitiligo lesions

	12 years = 88 patients		> 12 years = 524 patients	
	Number of cases	Percentage	Number of cases	Percentage
Vulgaris	42	47.73	152	29.00
Focal	23	26.14	135	25.76
Acrofacial	12	13.64	138	26.34
Universalis	1	1.14	24	4.58
Segmental	7	7.95	19	3.63
Mucosal	3	3.40	56	10.69
Total	88	100	524	100

interesting study where the frequency of atopy was found to be significantly higher in patients with vitiligo<sup>[12]</sup>. Kovacs also stated that patients with vitiligo have an increased risk of developing autoimmune diseases<sup>[5]</sup>. He also noted that auto-antibodies against different organ systems can be present in vitiligo patients without clinical correlation. A landmark study, including children as well as adults, was reported in 1994<sup>[4]</sup>, which discussed whether the association of other diseases with vitiligo is co-existence or a true association. This study could not confirm a higher prevalence for thyroid diseases or any other autoimmune disease for childhood vitiligo. They did not find a higher prevalence of auto-antibodies in their series; however, they concluded that as a developing group, vitiligo patients are at higher risk of developing thyroid disease with impaired function; association with other diseases is a random event.

Alkhateeb *et al* have stated that the frequency of six autoimmune disorders is significantly elevated in vitiligo probands and their first-degree relatives; vitiligo itself, autoimmune thyroid disease, pernicious anemia, Addison's disease, systemic lupus erythematosus, and probably inflammatory bowel disease<sup>[7]</sup>. A recent article<sup>[13]</sup> has reported the presence of thyromegaly, antithyroid antibodies and thyroid dysfunction in a significant number of children and adolescents with vitiligo. We believe that the issue is not settled yet. Discrepancy among various studies stresses on the need for more thorough studies on this aspect.

Our study did not show any of our patients having clinically apparent deafness or any ocular abnormality. Auditory disability and ocular involvement in vitiligo patients has attracted attention, because it is known that the inner ear contains melanocytes and also the pigment epithelium of the retina and the choroid are rich in melanocytes<sup>[14,15]</sup>. Since vitiligo affects all active melanocytes, auditory and ocular problems can result in patients with vitiligo<sup>[5]</sup>.

**Table 5:** Association of vitiligo with other diseases

Associated disease	Number of cases	Percentage
Thyroid antibodies	13	2.12
Diabetes mellitus	9	1.47
Alopecia Areata	21	3.4
Atopic dermatitis	49	8
Psoriasis	2	0.33

In conclusion, a clinico-epidemiologic study of vitiligo in Kuwait shows that generalized vitiligo is the commonest clinical-type observed. There were associated disorders/abnormalities in some patients. Keeping in view the observation of anti-thyroid antibodies in some of these patients, we suggest that patients having these antibodies should be followed up for the possible development of clinical thyroid dysfunction.

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