CHAPTER II

VITILIGO: CLINICAL PROFILES IN VADODARA, GUJARAT

2.1. Introduction

Vitiligo is an idiopathic, acquired, circumscribed hypomelanotic skin disorder, characterized by milky white patches of different size and shape and affects 1-2% of the world population (Agrawal et al 2001; Moscher et al 1999). Based on a few dermatological outpatient records, the incidence of vitiligo is found to be 0.25% - 2.5% in India (Das et al 1985; Handa and Kaur 1999). Gujarat and Rajasthan states have the highest prevalence ~8.8% (Valia and Datta 1996). There is a stigma attached with vitiligo and affected persons and family, particularly girls are socially ostracized for marital purpose (Mehta et al 1973). Since Gujarat shows high prevalence of vitiligo in India, a systematic study was undertaken to understand the etiopathogenesis of vitiligo. This chapter deals with the epidemiological study on dermatological outpatients of Gujarat vitiligo patients.

2.2. Materials and methods

The study consisted of 424 vitiligo patients who visited the Sir Sayajirao Gaikwad Medical College hospital Skin and Venereal outpatient department and a service hospital (Param hospital, Sakarda) in Vadodara. The diagnosis was essentially clinical and demographic details of all the patients including the age of onset, initial site of onset, duration of the disease, precipitating factors, and presence of leukotrichia, Koebner phenomenon, halo nevi, other associated diseases and family history were obtained from the vitiligo clinical proforma (Annexure I). Vitiligo was classified into different types based on the lesions i.e. lesions confined to one or a few patches localized in a particular area were grouped as focal vitiligo; lesions distributed in a segmental/dermatomal pattern as segmental vitiligo; lesions noted over both face and acral regions as acrofacial vitiligo; lesions affecting many parts of the body as vitiligo vulgaris and lesions confined only to mucous membranes as mucosal vitiligo (Handa and Kaur 1999).

2.3. Results

Among the total patients (424) 61.56% (261) were women and 38.44% (163) were men. The female to male ratio was 1.6:1. Duration of the disease varied from 15 days to 60 years and the average disease duration at the time of hospital visit was 3.3 years. Vitiligo patients were divided into seven age groups and age and sex distribution of the patients along with various clinical types of vitiligo is shown in Table 1.

Table 1. Age and sex distribution of patients with various clinical types of vitiligo

Age Group	Clinical types of vitiligo											
	Vulgaris		Focal		Segmental		Mucosal		Acro facial		Uni versal	
	M	F	M	F	M	F	M	F	M	F	M	F
0-10	12	14	6	13	0	3	-	1	1	0	0	0
11-20	17	50	17	30	7	7	3	1	4	5	0	0
21-30	23	33	9	12	0	4	-	3	5	4	0	3
31-40	17	21	3	13	1	2	1	3	1	5	0	3
41-50	15	11	5	8	3	1	-	-	1	4	1	0
51-60	4	4	1	1	1	0	-	-	1	0	1	0
61-70	0	1	2	1	0	0	-	-	1	0	0	0
Total	88	134	43	78	12	17	4	8	14	18	2	6

M, male; F, Female

One hundred and fifty two women (58.23%) reported the disease in the second (35.63%) and third (22.60%) decades as compared to 29.45% and 22.70% of men respectively. Out of 163 men 85 (52.15%) were in their second and third decades. The mean age of the disease was 25.59 years.

A detailed clinico-demographic profile of the patients is given in Table 2. Vitiligo vulgaris was the most common form of the disease in 222 (52.36%) patients. The sites of onset were the lower limb (45.52%), face (20.04%), trunk (12.03%), upper limb (8.96%), genital (5.19%), hand (3.54%), labial (2.83%) and scalp (1.87%) in the descending order.

Table 2. Clinico demographic profile of vitiligo patients

No of patients	Clinical types of vitiligo					
	Vulgaris	Focal	Segmental	Mucosal	Acro facial	Universal
N= 424	222 (52.36%)	121 (28.54%)	29 (6.84%)	12 (2.83%)	32 (7.55%)	8 (1.89%)
Males N = 163	88 (20.75%)	43 (10.14%)	12 (2.83%)	4 (0.94%)	14 (3.30%)	2 (0.47%)
Females N = 261	134 (31.60%)	78 (18.40%)	17 (4.00%)	8 1.89%)	18 (4.24%)	6 (1.41%)
Site of onset						
Scalp	3 (0.71%)	4 (0.94%)	1 (0.24%)	0	0	0
Face	34 (8.02%)	29 (6.84%)	8 (1.89%)	0	14 (0.11%)	0
Hand	7 (1.65%)	2 (0.47%)	0	0	6 (1.42%)	0
Trunk	25 (5.90%)	18 (4.24%)	6 (1.41%)	0	0	2 (0.47%)
Upper limb	14 (3.30%)	18 (4.24%)	1 (0.24%)	0	4 (0.94%)	1 (0.24%)
Lower limb	123 (29.00%	45 (10.61%)	9 (2.12%)	3 (0.71%)	8 (1.89%)	5 (1.18%)
Mucosal						
Labial	4 (0.94%)	3 (0.71%)	3 (0.71%)	2 (0.47%)	0	0
Genital	12 (2.83%)	2 (0.47%)	1 (0.24%)	7 (1.65%)	0	0
Total	222	121	29	12	32	8

Around 61 (21.93%) patients had a positive family history of vitiligo. The first-degree relatives (parent/brother/sister/son/daughter) were affected in 58 (13.68%), second-degree relatives (grandparent/maternal and/or paternal uncle or aunt) in 24 (5.66%) and third degree relatives in 11 (2.59%) patients (Table 3).

Table 3. Family history of vitiligo patients

First degree relatives	N	%
Parents	40 (9.43%)	
Brother	6 (1.42 %)	
Sister	7 (1.65 %)	13.68 %
Children	5 (1.17%)	
Second degree relatives		
Paternal grandparent	9 (2.12 %)	
Maternal grandparent	8 (1.89 %)	5.66 %
Maternal/Paternal uncle/aunt	7 (1.65 %)	
Third degree relatives		
Cousin	9 (2.12 %)	
Niece	0 (0 %)	2.59 %
Nephew	2 (0.47 %)	
Total	93	21.93%

Leukotrichia was seen in 39 (9.20 %) patients, where 23 (5.42%) were males and 17 (4.00%) were females. Koebner phenomenon was observed in 54 (12.75%) patients, out of which 31 (7.31%) were males and 23 (5.42%) were females. Premature graying of hair was observed in 98 (23.11%) patients. Among the various diseases associated with vitiligo, diabetes mellitus was found in 5 (1.18%), thyroidism in 4 (0.94%), tuberculosis in 4 (0.94%) hypertension in 3 (0.71%), psoriasis in 1 (0.24%), bronchial asthma in 3 (0.71%) and halo nevus in 2 (0.47%) patients (Table 4).

Table 4. Association of vitiligo with other diseases

Associated diseases	N	%
Diabetes mellitus	5	1.18
Thyroidism	4	0.94
Tuberculosis	4	0.94
Hypertension	3	0.70
Alopecia areata	5	1.18
Diabetes with hypertension	1	0.24
Psoriasis vulgaris	1	0.24
Bronchial asthma	1	0.24
Halo nevus	2	0.47

As can be seen from Table 5, the major precipitating factor was found to be physical injury (15.33%), and others include emotional stress, plastic footwear, etc. Association of Koebner phenomenon and leukotrichia was observed in 12.74% and 9.2% of the patients respectively (Table 6).

Table 5. Precipitating factors

Precipitating factors	N	%
Physical Trauma	65	15.33
Plastic shoes	8	1.89
Pressure	10	2.36
Emotional/ Mental Trauma	3	0.70
Drug/Chemical	2	0.47
Bindi	2	0.47
Burn	1	0.24
Condom	2	0.47
Pregnancy	1	0.24

Table 6. Association of Koebner phenomenon and leukotrichia with vitiligo

Association with	N	%
Koebner phenomenon	54	12.74
Leukotrichia	39	9.20

2.4. Discussion

The prevalence of vitiligo is high in India. The relative prevalence varies between 0.46 to 8.8 % (Handa and Kaur 1999). The varying ethnic background of the population residing in different geographic regions with varying environmental conditions may be attributed to the wide variation recorded in the prevalence of vitiligo in India.

The female to male ratio in our study is 1.6: 1, which is different from that reported by Handa and Kaur (1999), Koranne et al (1986), and Sarin et al (1977). Thus, most of the reports showed that males and females are affected at almost equal frequency (Das et al 1985; Mehta et al 1973; Bleehen et al 1992, Dutta and Mandal 1969; Moscher et al 1993). The number of female vitiligo patients reported

at the hospitals in Vadodara were found to be higher than males (Table 1) and females predominate presumably because women notice the change in appearance and approach the doctors sooner than men. In 55.90% of the patients, the age of onset was in the second or third decade, consistent with the reports from India (Koranne et al 1986; Sarin et al 1977; Behl and Bhatia 1972) and the west (Bleehen et al 1992; Moscher, 1993; Bolognia 1988). This shows that the disease starts at a younger age in the Indian population. However, Howitz et al (1977) showed the age of onset was between 40-60 years.

The duration of the disease varied widely from 2 weeks to 60 years, with the mean duration of 3.3 years in this study. The slow progression in the rate of disease may be the underlying reason for showing long duration of vitiligo in this study.

In our study vitiligo vulgaris was the most common type observed followed by focal, acrofacial, segmental, mucosal and universal. The frequency of distribution of clinical types of vitiligo varies in different studies (Koranne et al 1986; Sarin et al 1977; Bolognia et al 1988; Sehgal et al 1974). According to the reports of Koranne et al (1986) and Sarin et al (1977), generalized vitiligo was found to be more common. Thus our results suggest that Indians not only have an increased incidence of the disease but also have more widespread of the disease.

Lower limbs were the most common sites of onset in 45.52% of the out patients in this study irrespective of the clinical type of vitiligo. This is in concordance with the studies by Behl and Bhatia (1972), Dutta and Mandal (1969) and Lerner (1971), however, it is at variance with Handa and Kaur (1999) and Sehgal (1974), in which face was found to be the most common site of onset. In Western studies also extremities were the most commonly involved sites of onset (Bolognia et al 1988; Lerner 1959) of vitiligo.

Leucotrichia was seen in 9.2% of the patients in this study. Leucotrichia was reported in 9-45% of patients with vitiligo (Dutta and Mandal 1969; Sehgal 1974).

Leucotrichia is considered to be a poor prognostic factor. Koebner phenomenon was seen in 12.74% of Vadodara patients. Koebner phenomenon was reported to occur as in many as 33% of vitiligo patients (Bleehen et al 1992; Moscher et al 1993), which is a common feature found in active vitiligo.

The association of vitiligo with thyroid disease is 0.94% in our study, which was reported to be 7.8% by Schallreuter et al (1994). Diabetes mellitus is found to be 1.18 % in our study, whereas the reported value was 0.6% (Schallreuter et al 1994). Premature graying and hypertension are found to be 23.11% and 0.70% in our study, but premature graying was reported to be 2.8% (Schallreuter et al 1994). Tuberculosis and psoriasis are found to be 0.94%, 0.24% and the incidence of bronchial asthma is found to be 0.71% in our study. We have observed halo nevi in 0.47% of our patients. Halo nevi in vitiligo have been reported to occur commonly and to be single or multiple (Koranne et al 1986; Moscher et al 1993; Behl and Bhatia 1972).

There was a family history of vitiligo in 21.93% of Vadodara patients and 20 patients had more than one family member with the disease (Shajil et al 2006). Vitiligo has a polygenic or autosomal dominant inheritance pattern with incomplete penetrance and variable expression (Bleehen et al 1992; Moscher et al 1993; Bolognia et al 1988). Familial occurrence has been reported to vary from 6.25 - 30% (Koranne et al 1986; Sarin et al 1977; Dutta and Mandal 1969; Behl and Bhatia 1972; Sehgal 1974; Lerner 1959; Hafez 1983). Positive family history is considered to be a poor prognostic factor.

2.5. References

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