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Demographic Characteristics of Vitiligo Patients in Beni-Suef University Hospital

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Abstract

Background: Vitiligo is an acquired depigmentary skin disease that manifests as circumscribed depigmented patches or macules on the skin. It may have devastating psychological and social consequences Vitiligo is a common depigmenting disorder with profound psychosocial impacts. Although the etiology of vitiligo remains obscure, but recent experimental studies infer the presence of interactions between melanocytes and other typical skin cells, particularly keratinocytes. **Patients and methods:** This study investigated the demographic data in 30 vitiligo patients at dermatology department in Beni-Suef University Hospital. **Results:** The most significant findings in the clinical data were as follow: the female number doubled that of males, 46.7% of patients were housewives, negative family history of vitiligo was in 85.7% of patients, the commonest type of vitiligo was the vulgaris (50.0%), 70% of patients had skin type VI, 80% of patients had generalized form of disease, 96.7% had bilateral disease, and 50 % of the biopsies were taken from the back. **Conclusion:** This was an epidemiologic study of patients with psoriasis in Egypt and provides an overview of the epidemiologic characteristics and clinical profiles of this patient population.

Keywords: Vitiligo, Egypt, skin type, VIDA.

1. Introduction

Vitiligo is an acquired depigmentary skin disease that manifests as circumscribed depigmented patches or macules on the skin [1]. It may have devastating psychological and social consequences Vitiligo is a common depigmenting disorder with profound psychosocial impacts [2]. Although the etiology

of vitiligo remains obscure, but recent experimental studies infer the presence of interactions between melanocytes and other typical skin cells, particularly keratinocytes [3].

Vitiligo patients have unpredictable prognosis and response to therapy. However many new therapies have been developed nowadays, but without optimal efficacy. New trends are aiming to understand the etiology of vitiligo which in turn promotes development of new effective therapies [1].

Three main hypotheses explain the pathogenesis of vitiligo that is not exclusive of each other: biochemical/cytotoxic, neural and autoimmune. Oxidative stress and the accumulation of free radicals have been supposed as an important biochemical pathogenic mechanism. Better understanding of the pathogenesis theories may guide us to develop more effective therapy for this common disfiguring disease [4].

Current treatment modalities are directed towards stopping progression of the disease and achieving repigmentation. Therapies include corticosteroids, topical immunomodulators, photo (chemo) therapy, surgery, combination therapies and depigmentation of normally pigmented skin. In photo (chemo) therapy, narrowband ultraviolet-B therapy (NB-UVB) seems to be superior to psoralen ultraviolet-A therapy (PUVA) and broadband UVB. Narrowband UVB (NB-UVB) is a more recent form of phototherapy that uses wavelengths between 305 and 311 nm. NB-UVB can be used in children, pregnant or lactating women and in individuals with hepatic or kidney dysfunction [4].

2. Patients and Methods

This is a study of 30 Egyptian patients with vitiligo at dermatology department, Beni-Suef university hospital. The study was conducted from 2010 to 2015. Patients were diagnosed by detailed history, clinical examination and confirmed by skin biopsies. The history of patients included the following points:

2.1 Medical history:

1. Age.
2. Gender.
3. Time of the last new lesion appearance.
4. Occupation.
5. Treatment history.
6. Family history.

2.2 Clinical assessment to determine:

1. Vitiligo type.
2. Skin type.
3. Extent of vitiligo.
4. Sites of vitiligo.
5. The vitiligo disease activity score (VIDA) was utilized to evaluate the disease activity.

2.3 Skin biopsies.

Four mm punch skin biopsies were taken from patients (vitiligo lesion).

Statistical methodology

Data were coded and entered using the statistical package SPSS (Statistical Package for the Social Sciences) version 24.

Data was summarized using mean, standard deviation, median, minimum and maximum in quantitative data and using frequency (count) and relative frequency (percentage) for

categorical data. Comparisons between quantitative variables were done using the non-parametric Kruskal-Wallis and Mann-Whitney tests. For comparison of serial measurements within each patient the non-parametric Wilcoxon signed rank test was used [5]. Correlations between quantitative variables were done using Spearman correlation coefficient [6]. P-values less than 0.05 were considered as statistically significant.

3. Results

This study was conducted through analysis of clinical data of 30 patients with confirmed diagnosis of vitiligo referred to the dermatology department, Beni-Suef university hospital during the period between 15 June 2017 and 14 January 2018.

The age of the diseased group ranged between 15-50 years with mean age of (31.00 ± 12.86) years. The time at which the last new lesion appeared ranged between 0.02-120.0 months with mean period of (9.0 ± 21.59) months. The percentage of the affected area of vitiligo skin patients ranged between 2.0-95.0 % with mean percentage of (23.63 ± 23.94) %.

Table (1): Age, time since the last new lesion, and percentage of involved area of skin of vitiligo.

	Cases				
	Mean	SD	Median	Minimum	Maximum
Age	31.00	12.86	28.50	15.00	50.00
Last new lesion (months)	9.00	21.59	3.50	0.02	120.00
%	23.63	23.94	20.00	2.00	95.00

According to their gender, males represent 10 cases (33.3%) while females count 20 (66.7%). Regarding occupation, fourteen (46.7%) patients were housewives, two (6.7%) patients were workers, one (3.3%) patient worked as a tailor, seven (23.3%) of them were students, one (3.3%) was security, three (10.0%) were employees, one (3.3%) was a cooker and one (3.3%) was a carpenter. Regarding family history, four cases have positive family history of vitiligo (14.3%) while 24 cases (85.7%) have no family history. According to the vitiligo type; eight (26.7%) cases were of mixed type and fifteen (50.0%) cases were vitiligo vulgais, two (6.7%) patients were vitiligo universalis, two (6.7%) patients were segmental, two (6.7%) were focal and one (3.3%) was acral. According to the skin type; eight cases (26.7%) were classified as skin type 3, twenty one cases were type 4 (70.0%) and only one case (3.3%) with skin type 5.

Table (2): Clinical data of vitiligo patients.

		Count	%
Sex	Male	10	33.3%

	Female	20	66.7%
Occupation	Worker	2	6.7%
	Tailor	1	3.3%
	Student	7	23.3%
	Security	1	3.3%
	Housewife	14	46.7%
	Employee	3	10.0%
	Cooker	1	3.3%
	Carpenter	1	3.3%
Family history	Yes	4	14.3%
	No	24	85.7%
Vitiligo type	Vulgaris\ acrofacial (mixed)	8	26.7%
	Vulgaris	15	50.0%
	Universalis	2	6.7%
	Segmental	2	6.7%
	Focal	2	6.7%
	Acral	1	3.3%
Skin type	3	8	26.7%
	4	21	70.0%
	5	1	3.3%

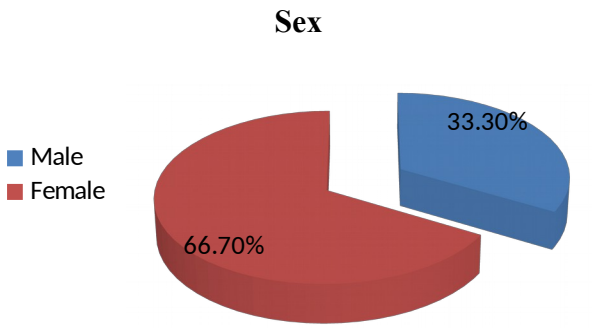


Figure (4): Sex of vitiligo patients.

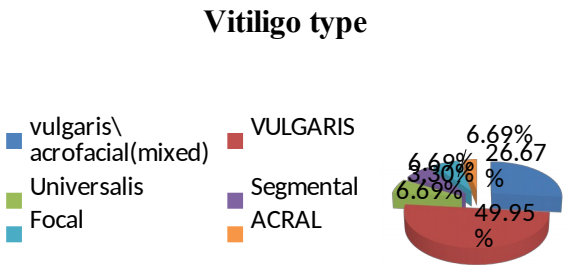


Figure (6): Vitiligo type.

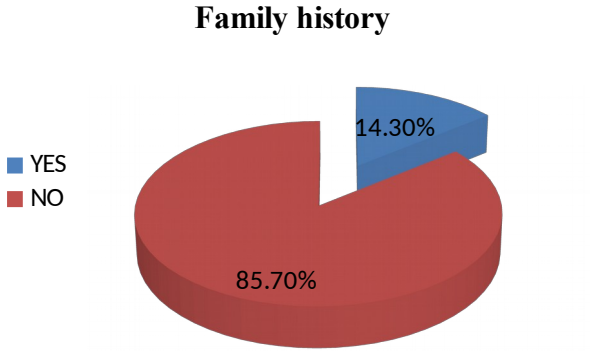


Figure (5): Family history in vitiligo patients.

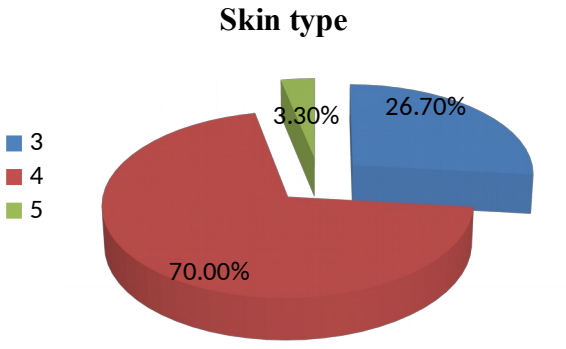


Figure (7): Skin types among vitiligo patients.

The distribution of vitiligo was symmetrical in 17 (58.6%) cases and asymmetrical in 12 (41.4%) cases. In addition, six (20.0%) cases were diagnosed with localized disease while 24 (80.0%) cases

were diagnosed with generalized form of the disease.

Moreover, twenty nine (96.7%) cases had bilateral disease and 1 (3.3%) case was unilaterally affected. Sixteen (53.3%) patients had lesions involving face while the other 14 (46.7%) patients had lesions that were not involving the face. Hand and feet were affected in 18 (60.0%) patients while the other 12 (40.0%) cases hand and feet were not affected.

Biopsies were harvested from back in 15 (50.0%) patients, from leg in 7 (23.3%) patients, from foot in 2 (6.7%) patients and from arm in 3 (10.0%) patients. Other cases were biopsied from thigh in one (3.3%) case, from shoulder in one (3.3%) case, from neck in one (3.3%) case.

VIDA was assessed in cases to determine the degree of the disease. Six (20.0%) cases were included in stage 0, two (6.7%) cases were in stage 1+, eight (26.7%) cases had stage 2+, six (20.0%) cases were in stage 3+ and 9 (26.7%) cases were in stage 4+.

Table (3): Other clinical characteristics of vitiligo patients.

		Count	%
Symmetry	Symmetrical	17	58.6%
	Asymmetrical	12	41.4%
Local/ generalized	Localized	6	20.0%
	Generalized	24	80.0%
Bilateral/ unilateral	Unilateral	1	3.3%
	Bilateral	29	96.7%
Face	Yes	16	53.3%
	No	14	46.7%
Hand and feet	Yes	18	60.0%
	No	12	40.0%
Biopsy	Thigh	1	3.3%
	Shoulder	1	3.3%
	Neck	1	3.3%
	Leg	7	23.3%
	Foot	2	6.7%
	Back	15	50.0%
	Arm	3	10.0%
VIDA	0	6	20.0%
	1+	2	6.7%
	2+	8	26.7%
	3+	6	20.0%
	4+	8	26.7%

Figure (8): Symmetry of lesions distribution in vitiligo patients.

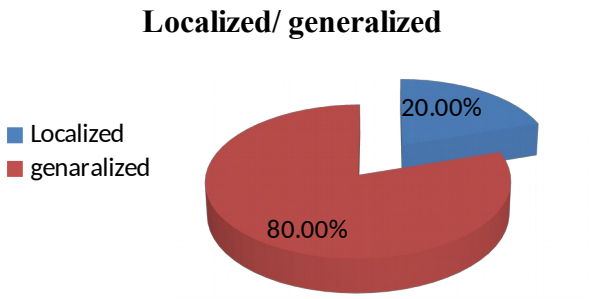


Figure (9): Classification of vitiligo into localized and generalized.

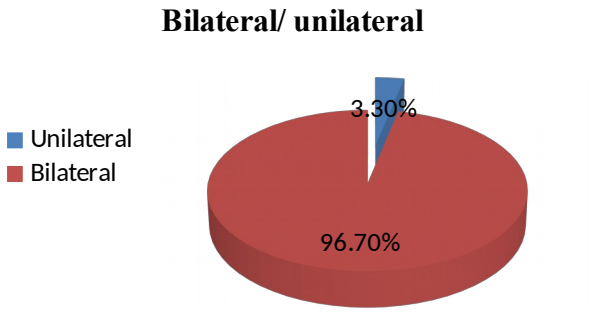


Figure (10): Vitiligo disease; unilateral or bilateral.

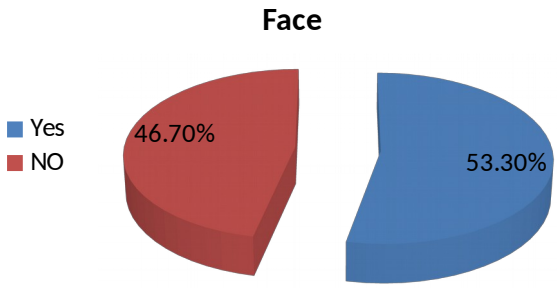
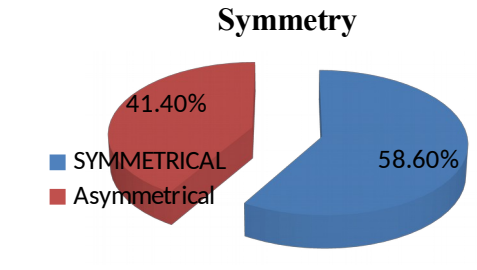


Figure (11): Face involvement in vitiligo patients.



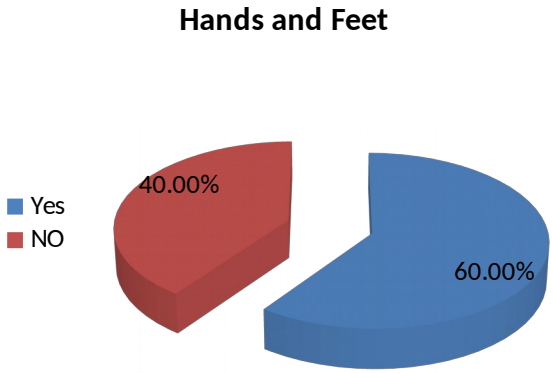


Figure (12): Hands and feet involvement in vitiligo patients.

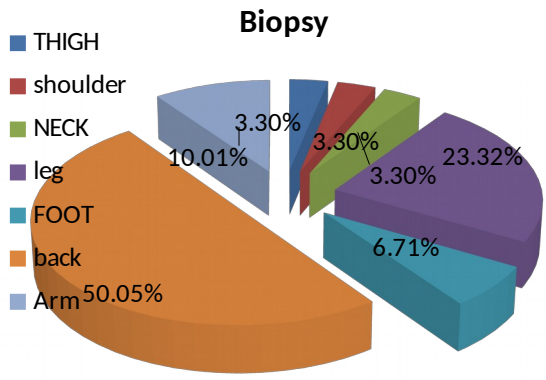


Figure (13): Biopsy sites in vitiligo patients.

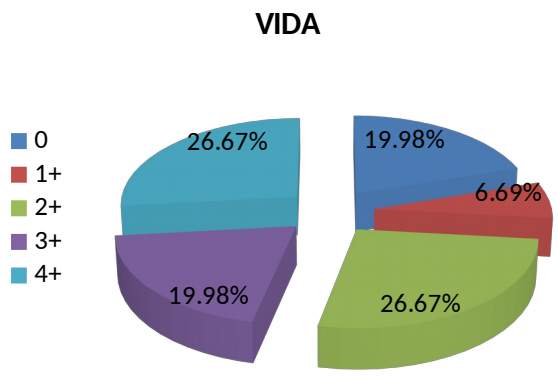


Figure (14): VIDA in vitiligo patients

4. Discussion

Vitiligo is the most prevalent pigmentary disorder, which has a variety of comorbidities [7]. Vitiligo is a chronic, acquired, common, often heritable, progressive depigmenting disorder, which mainly affects melanocytes from epidermis basal layer [8]. It is characterized by the appearance of well-circumscribed milky cutaneous macules devoid of identifiable melanocytes on the skin and mucous membranes [9]. Although non-fatal in nature, vitiligo causes severe negative psychosocial impact on the affected individuals, such as social stigmatization and decreased quality of life [10].

Vitiligo is a multifactorial disorder, related to both genetic and non genetic factors. It is generally agreed that there is an absence of functional melanocytes in vitiligo skin due to their destruction. Several hypostheses have been proposed to explain the pathophysiology of melanocytes destruction [11]. However, there is strong evidence that vitiligo is an autoimmune disease [12].

The disfigurement associated with vitiligo could cause serious emotional stress for the patient and affect his quality of life. Sun protection of vitiliginous areas with sun blocks is important to prevent sunburn, photodamage and occurrence of Koebner phenomenon [13], [14]**.** Successful treatment of vitiligo is often difficult, and treatment modalities have traditionally centered on a combination of camouflage products, topical corticosteroids, topical immunomodulators, psoralen plus ultraviolet A light therapy (PUVA) and ultraviolet B (UVB) light therapy. Successful repigmentation occurs only for approximately half of treated patients, leaving many patients without a solution [15].

The aim of this work was to study the various vitiligo types, distribution of disease, family history, and to find out age, sex, occupation of vitiligo patients.

As regards clinical data, the present study results showed that the age of vitiligo patients ranged from 15 to 50 years with average age of 31 years, consistent with the other reports; a study operated on 246 vitiligo cases, the average age was 25.9 years old and the age range 15 to 24 years was most affected 29.3%, and 82.9% of patients was under 40 years old [16], and also

with a study reported that the mean age of 34.5 years in 69 vitiligo patients [17]. However, one study included 74 vitiligo patients; their age ranged from 5 to 68 years although their mean age was 31.5 years almost as the present study [18].

In the present study, the time at which the last new lesion appeared ranged between 0.02-120.0 months with mean period of (9.0 ± 21.59) months. In addition, the percentage of the affected area of vitiligo skin patients ranged between 2.0-95.0 % with mean percentage of (23.63 ± 23.94) %. In another study performed on 613 vitiligo patients had less than 25% body surface area involved [19]. Moreover, another study found that the mean of the extent of disease (the affected % of body) was 22 ± 19.40 % in 74 vitiligo patients [18].

The female to male ratio in this study was 2:1; males are 10 cases (33.3%) while females count 20 (66.7%). Most of the other reports shown that males and females were affected with almost in the same percentages, for instance, a previous study showed that among 150 recruited vitiligo patients, 103 (68.7%) were women and 47 (31.3%) were men [20]. This was different from a study that showed, male 131 (53.3%) was more commonly affected than female 115 (46.7%) [16].

The number of female vitiligo patients were found to be higher than male because women notice the change in appearance and approach the doctors sooner than men and of the social stigma in the community, young females tend to report earlier due to matrimonial anxiety [19].

According to the present study, housewife is the most common occupation found among vitiligo patients, followed by students, employees, workers, other jobs as tailor, cooker, carpenter, security were at the bottom. This was similar to a previous study that documented housewife (33.0%) as the most frequent occupation, followed by office job (30.4%), production (7.4%), student (6.8%), private business (4.3%), health care/medical (3.2%), agriculture (2.6%), construction (2.1%), and transportation (1.7%). Beauty shop, fishery, mining/manufacturing, athlete, soldier, and painter were combined into ‘others’ [23]. Whereas another study found that between 15o vitiligo patients; homemakers (34%) were the commonest included job followed by student (13.3%), professional (11.3%), and sales, manual laborer (41.3%) [20].

A positive family history of vitiligo was present in 14.3% of cases in this stidy, while 85.7% cases have no family history. Similar percentages of positive family history were reported in previous studies [18, 24]. But, another study showed that cases with negative family history of vitiligo were more than positive ones [17].

Vitiligo vulgaris (50.0%) was most common type observed in our study followed by mixed, then by universalis, segmental, focal, and finally acral which is similar with some previous studies [16, 19], while different from other studies [17, 21].

According to the present study; the most encountered skin type was type 4, followed by type 3, then skin type 5, and this was in consistent with a previous study [20], but in contrast to another study that reported skin type 3 as the most common one among vitiligo patients [22].

In the present study, the distribution of vitiligo was symmetrical in 58.6% of cases and asymmetrical in 41.4% of cases, twenty percentages had localized disease while 80.0% had generalized form of the disease, and 96.7% showed bilateral disease and 3.3% was unilaterally affected. This agreed with a previous study that found that majority of patients had bilateral distribution [19].

The results of the current study showed that 53.3% patients had lesions involving face, and 60.0% showed hands and feet were affected. Biopsies were harvested mostly from back, followed by leg, and then foot, arm, thigh, shoulder, and neck. This was in accordance to a study that documented 41.1% of cases with hands or feet involvement, and 55.1% with facial involvement [23].

In the present study, VIDA was assessed in cases to determine the degree of the disease finding that stage 2+ and stage 4+ were the commonest, followed by stage 0 and stage 3+, and finally stage +1. In a previous study, it was reported that among 74 vitiligo patients, VIDA score ranged from 0 to 4, with mean value of 2.40 [18].

6. Conclusion and Recommendations

Although we attempted to reveal multilateral aspects of the clinical profiles of Egyptian patients with vitiligo, due to the recruitment of adult patients from Beni-Suef university hospitals, the representation of the general vitiligo population in Egypt is limited. Further, because this study was cross-sectional, it is necessary to use caution when interpreting results for causal relationships between disease- related factors and outcomes over time. Therefore, additional research in the form of prospective longitudinal cohort studies is needed to further understanding of vitiligo in the Egyptian population.

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