

Epidemiological study of vitiligo on referred patients from Imam Khomeini Hospital, Ahvaz, Iran, 2009-2012

Alireza Ghorbani Birgani ^{1*}, Reza Masoodi ²

1. Department of Nursing, Gachsaran Branch, Islamic Azad University, Gachsaran, Iran.

2. Department of Nursing, Shahrekord University of Medical Sciences, Shahrekord, Iran.

Abstract

Introduction: Vitiligo is an autoimmune skin disease destroying the pigments of the skin, and subsequently causing whiteness on the body skin. This study aimed to evaluate the epidemiology of vitiligo from patients referred to Ahvaz Imam Khomeini Hospital, Iran, 2009-2012.

Materials & Methods: A cross-sectional study was performed characterize on 600 patients with vitiligo referred to Imam Khomeini Hospital, Ahvaz in January 2009 to December 2012 using sequential sampling. Data were collected using a data collection form, Included parameters of age, sex, time of onset, family history, site of lesion, type of involvement and associated diseases. Data were analyzed by Chi-square test and SPSS software.

Results: The mean age was 26.4 ± 11.2 years And the majority were women. The average age of onset was 27.6 years. Mean duration of disease was 11.7 years in men and women. Obtained results showed that 34.1% of the patients had a positive family history. The hands, neck and face were the most common involved sites. The generalized type was the most common form of vitiligo. Associated disorder with vitiligo were documented in order for Leukotrichia, type 2 diabetes, hypothyroidism and alopecia areata.

Conclusion: This study indicated that the high percentage of vitiligo occurred in young ages therefore, it is expected that better case finding and screening methods were used to identify people with this disease so that, it can be quicker to recognize this genetic and autoimmune disease, and finally treated with better quality.

Keywords: Epidemiologic, Vitiligo, Iran.

Introduction

Vitiligo is a skin disease, which kills melanocytes of the skin, or eliminates skin pigment, and then causes the whiteness of the skin in lesion sites. Usually white spots are seen symmetrically on both sides of the body mostly on the face, lips, hands, arms, legs and genitals. Vitiligo is more likely to be developed in late childhood (9 to 12 years) to middle age (1). This disease is the most common skin pigments disorder, with incidence rate of 0.1% to 2% in different populations (2-4). Although, the main cause of

disease is unknown, possible mechanisms of genetic, autoimmune, biochemical, nervous, and viral mechanisms are involved in occurrence of the disease (1). About 50 percent of people with vitiligo have symptoms before the age of 20 years, and about 95 percent before the age of 40 years (5). Based a study by Bologna, About a fifth of the family of the patients had been suffering from vitiligo (6). The disease can equally affect all races and both sexes (1). Vitiligo is usually divided into three types: Localized (in which the pigment-free area is limited to one or more

*Corresponding author:

Department of Nursing, Gachsaran Branch, Islamic Azad University, Gachsaran, Iran.

Tel: +989163032478 E-mail: ghorbani@ajums.ac.ir

Received: 4Aug2012

Accepted: 25Sep2012

parts of the body), segmental (in which a body part is affected by areas without pigment) and generalized or universal (in which different parts of the body are affected by pigment-free areas). Vitiligo disease is more common in people with diseases such as hyperparathyroidism, hypothyroidism, adrenal cortical insufficiency, alopecia areata, pernicious anemia, rheumatoid arthritis, diabetes, lupus and psoriasis (7).

Numerous studies have been conducted in related to the demographic characteristics of this disease in Iran and around the world, some of which are briefly mentioned below.

A study by Berti et al., was performed on 204 patients with vitiligo in Italy during 1998 to 2008, in which the age of onset was found to be 36.2% in patients. Family history was seen in 31.2% of patients and 21.1% of patients had other autoimmune diseases. Vulgaris vitiligo and universal vitiligo were the highest and lowest types of vitiligo, respectively (3). In another study which was conducted by Akay et al., on 80 patients in Turkey with vitiligo in 2008, it was found that patients were mostly women, with the average age of 37 years, and their average age of onset was 10 years. In addition, vulgaris vitiligo was reported as the most type of vitiligo. 55% of patients also had an autoimmune disease (8). A study was conducted on 300 patients in Iran to examine patients with vitiligo in Birjand's Vali-Asr Hospital during over in which the obtained results showed that the most patients patients were women and 23.6% of patients had a family history. The most involved sites were the limbs and face, and the generalized type was the most common form of vitiligo. Among the associated disease, alopecia areata and leukotrichia were observed in 1.33% and

11%, respectively (9). In another study on 86 patients from Tabriz, carried out by Babaie Nejad et al., in 2010, showed that the mean age of onset was 21.8 years and the distribution of patients was 61% female and 39% male. The most common area of involvement was the hands (33.7 percent) and faces (32.1 percent). The vitiligo vulgaris (40%) was the most common type of the disease. In 24.4% of cases, there was a family history of vitiligo. However, hypothyroidism incidence in patients with vitiligo was also reported by 21.1% (10).

Considering the high percentage of the disease in Iran and around the world and the lack of accurate statistics and information of the disease at the Ahvaz, the researchers decided to conduct a study to examine vitiligo disease in patients referred to dermatology clinic of Imam Khomeini Hospital in Ahvaz during over 2009-2012.

Materials and Methods

This study was performed with a descriptive-analytical method of cross-sectional type on 600 patients with vitiligo referred to dermatology clinic Imam Khomeini Hospital, Ahvaz in the time period of January 2009 to December 2012 using sequential sampling. Data were collected using a data collection form (including questions such as age, sex, time of disease onset, family history, lesion site, type of involvement and comorbidities). The patients were divided into four age groups: under 15 years, 16 to 30 years, 31 to 45 years, and above 46 years. To be eligible for inclusion, the patients were examined and diagnosed based on clinical symptoms of vitiligo by a dermatologist: small areas with different skin color (macula), the premature

whiteness of eyebrows, beard, and hair in all parts of the body. Depending on the extent of the lesion, patients were divided into 3 categories: focal, segmental and generalized. Finally, the data were analyzed using SPSS software and Chi-square test was set in significant level of $p \leq 0.05$.

Ethical considerations

Identifying the intended patients, the permission was obtained from the Ethical Committee of Gachsaran Islamic Azad University, and obtaining written consent from patients or their relatives was in place allowing researchers to conduct the study.

Results

The obtained results from 600 patients showed a average age of 26.4 ± 11.2 (2-69 years),

mostly women (58.6%). Average age of onset was 27.6 years (2-56 years), and they were mostly in the age group of 16 to 30 years (41.6%). Duration of exposure among women and men was 12.3 and 11.2 years, with a total average of 11.7 years (Table 1).

A percentage of 34.1% of the patients had a family history of disease (In women 16.8 and men 17.6 percent). the hands (39%), neck and face (28%) were the most common lesion sites. The most common vitiligo types were generalized (49.5%), focal (33.7%) and segmental (16.8%), respectively (Table 2).

Associated disorder with vitiligo were documented in order for Leukotrichia (22.4%), type 2 diabetes (12.4%), hypothyroidism (8.6%) and alopecia areata (5.4%).

Table 1: Characteristics of under study patients

Sex	Male	Female	Total
Number of Patients	249 (41.4)	551 (58.6)	600
Mean age of patients (Year)	29	24.5	26.4
Mean age of onset (Year)	26.6	29.2	27.4
Duration of disease (Year)	11.2	12.3	11.7

Table 2: The type of involvement in under study patients

Type of involvement	Number	Percent
Generalized	297	49.5
Focal	190	33.7
Segmental	113	16.8
Total	600	100

Discussion

Vitiligo disease affects men and women equally, and usually occurs between the ages of 10 to 30 years although it may more likely to occur under the age of 20 years (7). The most contributed patients in this study were women (58.6%) with average age of 26.4 ± 11.2 years (2-69 years). The extracted results from this study showed a consistency with the other numerous studies (9-14). The sensitiveness of the women regards to their beauty and health issues could be one of the reasons for their more referral to the dermatologist than men in numerous studies, which in turn enhances the figures for women than men.

The average age of onset in patients of this study, who were mostly in the age group of 16 to 30 years (41.6%), was 27.6 years (2-56 years). These result differ from the study of Babaie Nejad et al., in Iran, according to which the average age of onset was 20 years(10). In addition, this case is inconsistent with studies conducted by Berti et al., (3) in Italy and Akay et al., in Turkey, in which the ages of onset were 36.2 and 10 years respectively(8); however, it is consistent to the studies conducted by Arycan et al., in Turkey(12) and Boisseau-Garsaud et al., in France in which stating that the age of onset was 30 years(15).

Another finding of the current study was a positive family history of vitiligo in 34.1% of patients. The findings were different with the results of Babaie Nejad et al., (24.7%) (10) and Shaban et al., (23.6%) in Iran (9) and Paravar et al., (12 percent) in the United States (16) and Jaigirdar et al., (24 percent) in Bangladesh (17); however, it is fully consistent with the study of Boisseau-Garsaud

et al., in France whose family history of disease was confirmed at 34%(15).

In the present study the hands, faces and necks were the most common lesion areas in patients with vitiligo (28 percent). Most sites involved in the study of Babaie Nejad et al., were reported in hands (32.7%) and face (32%)(10); and the study of Talsania et al., was reported in hands (80%) and face (76%)(18), which is consistent with the results of our study. Among the reasons for the high incidence of disease in the hands and face, the more exposure of these spots to the sunlight and the more contact with environmental irritants could explain the cause of the most affection on these spots.

In terms of the lesion extension the findings of the current study showed that the generalized type (49.5 percent) was evidenced as the most common type among the others vitiligo type. After the generalized type, focal (33.7%) and segmental (16.8%) types were found, respectively. In studies of Shaban et al., (9), Jaigirdar et al., (17) and Arycan et al., (12), generalized type of vitiligo was reported as the most common type of disease with a possibility of incidence of 51 to 73 percent. These results are numerically higher than the current study however, they are the same in terms of common type of disease. In present study, the most common associated disorder with vitiligo was proved to be leukotrichia (22.4 percent), and then, type 2 diabetes (12.4%), hypothyroidism (8.6%) and alopecia areata (5.4 percent) in order. In the study by Shaban et al., (9), the most common associated disorders with vitiligo were announced to be leukotrichia (11%) and alopecia areata (1.33%) the statistics which are

less than the present study. In a study by Jaigirdar et al., leukotrichia (with 44 percent) was most disorder associated with vitiligo(17), which was higher than the result obtained in the present study. In a study by Arycan et al., the disorders associated with vitiligo include type 2 diabetes and thyroid disorders (with the same amount of 4.4%)(12), which was lower than the findings of the present study. In Akay et al., study , alopecia areata was documented as 10% (8) which was higher than the present findings. Paravar et al., (16) and Gopal et al., (19) confirmed that the rates of hypothyroidism were 14.1 and 12 percents, which was higher than the current study.

One reason why there were a lot of problems on diabetes and hypothyroidism in current study is the high percentage of these diseases in the country.

The diseases associated with vitiligo strengthen more the hypothesis that vitiligo is an autoimmune disease. The high cost of specific tests, which was necessary for accurate diagnosis of autoimmune disorders, was among the limitations of this study.

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Conclusion

This research produced relatively similar results in comparison with other studies in Iran and around the world. Considering the high percentage of vitiligo at young ages (under 30) in the world and Iran which was confirmed in this study, it is expected that better case finding and screening methods (use of more specialized diagnostic procedures) are used to identify people with the disease, so that autoimmune and genetic disorders can be more quickly identified, and finally, can be treated with better quality. In this context, it is recommended that to prevent the onset or progression of the disease, exposing to the sunlight should be avoided in unnecessary cases, and skin care should carefully be more considered. In addition, people with vitiligo have the necessary awareness about the disease and its treatments as possible, so that they are able to contribute to better decisions about their health care measures.

Acknowledgments

We are grateful to the staff of Islamic Azad University, Gachsaran, and other persons for their help in the course of this study.

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