The clinical patterns of vitiligo “hospital-based study” in Makkah region, Saudi Arabia

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Abstract

Background: Little is known about the clinical patterns of vitiligo and its associations in Arab countries, particularly Saudi Arabia.

Methods: We performed a retrospective review of 135 medical records of patient with vitiligo seen at the Hera Hospital, Makkah, Saudi Arabia between January 2010 and June 2013.

Results: Of the 135 patients (mean age, 24.5 years), 91 (67.4%) were females. Twenty-six patients (25%) had a positive family history, 12.6% with associated thyroid disorders, 9.6% diabetes mellitus, 8.9% atopic dermatitis, 3.7% leukotrichia, and 2.2% alopecia areata. Sixty percent of patients had localized vitiligo, 37% generalized, 9.6% acrofacial, and 1.5% universal. The commonest site for the first vitiligo lesion was the face (28% of patients), whereas the commonest site at the time of diagnosis was the lower limb (51% of cases). The commonest topical treatment for localized vitiligo was tacrolimus (34.8%), whereas narrow band ultraviolet B (14%) had most commonly been prescribed for those with generalized vitiligo.

Conclusions: The patients were predominantly females, with a large proportion having a positive family history. The mean age of onset of vitiligo in our study was 24.5 years. It was commonly associated with thyroid disorders. Localized vitiligo was the most prevalent type.

Keywords: Vitiligo; Saudi Arabia; Makkah

1. Introduction

Vitiligo is a common disorder of skin pigmentation. The prevalence ranges from 0.1% to 4% and is estimated to be about 1% in white individuals (Lerner, 1971). In Saudi Arabia, 40% of dermatologists reportedly seeing from 5 to 10 vitiligo patients per week, 12.6% seeing more than 10 patients per week (AlGhamdi, 2009). Because 30% of patients have a positive family history, a causative genetic component is likely (Kostovic and Pasic, 2005). Studies of both twins and whole families have provided evidence for the importance of a genetic role in vitiligo development (Passeron and Ortonne, 2005; Zhang et al., 2005).
Though uncertain, the causes of this condition seem to be dependent on an interaction between genetic, immunological and neurological factors (Whitton et al., 2008). In general, vitiligo has a multifactorial etiology and polygenic inheritance. The most likely theory about causation proposes that alterations in humoral or cellular immunity result in autoimmune processes attacking the melanocytes, causing non-functioning or absence of melanocytes in the affected area (Van den Wijngaard et al., 2000). Vitiligo is divided into several types based on its distribution pattern: localized, segmental, generalized, mucosal, acrofacial, and universal.

The diagnosis of vitiligo depends on history and physical examination, which reveals depigmented skin patches or lesions. In some challenging cases, such as vitiligo in lightly pigmented patients, a Wood’s lamp can be useful for highlighting areas of pigment loss.

There are many options for treating vitiligo. Medical therapies include photochemotherapy, phototherapy with ultraviolet B (UVB) radiation (broadband and narrowband), topical steroids, systemic steroids, topical immunomodulators (tacrolimus and pimecrolimus), vitamin D3 analogs, and excimer laser (Kostovic and Pasic, 2005).

The aim of this study was to evaluate the clinical features of vitiligo and its associated comorbidities in Saudi Arabia, a topic about which there is little reported data.

2. Materials and methods

We performed a retrospective review of the medical records of 135 vitiligo patients who attended the dermatology outpatient clinic of Hera General Hospital in Makkah, Saudi Arabia, from January 2010 to June 2013. We enrolled all vitiligo patients in the study with no exclusions based on sex, nationality, city of residence, or socioeconomic status. The diagnosis of vitiligo was made clinically. We developed a data collection form to facilitate collection of relevant clinical and other data on sex, age of vitiligo onset, each patient’s Fitzpatrick skin type, family history of vitiligo, family history of premature graying of scalp hair, associated diseases, precipitating factors, location of the first lesion, type of vitiligo, location of lesions, presence of trichrome, treatment modalities, and response to treatment.

In our study, we used Statistical Package for Social Sciences software, version 20, for data entry and analysis. Continuous data are presented as means. Categorical variables are presented as frequencies and percentages. Our study was designed around ethical considerations of justice, autonomy, and beneficence. The research proposal was approved by the Research Ethics Committee of the Hera General Hospital in Makkah, Saudi Arabia.

3. Results

In all, 31,342 patients were seen in the dermatology department of Hera General Hospital, Makkah, Saudi Arabia from January 2010 to June 2013. Among those patients, 135 had vitiligo; thus, its incidence was 0.43%. Female patients were in the majority, comprising 91 (67.4%), with the male to female ratio therefore being 1–2.06. The patients ranged in age from 1 to 76 years, with a mean age of 24.5 years. Twenty-six patients (25%) reported that other members of the family had vitiligo, 19% of affected patients and their family members being first-degree relatives. There was a positive correlation between family history of premature graying of scalp hair and vitiligo in 7.27% of the patients. Table 1 shows the correlations between age groups and family history of vitiligo.

The main type of triggering factor was physical factors such as trauma (Koebner phenomenon) (8% of patients). The next most common precipitating factor was illness (5% of patients). Pregnancy and emotional factors were reported by 3% of patients and a history of severe sunburn by 2%.

Associated autoimmune/endocrine disorders were present in the majority of the patients. Of these, thyroid disorder was the most common, being reported in 12.6% of patients and followed by diabetes mellitus in 9.6%, rheumatoid arthritis in 2.2%, and multiple sclerosis in 0.7%. None of our patients had pernicious anemia. Other comorbidities included cardiac problems in 8.9%, bronchial asthma in 5.9%, hearing problems in 3.7%, and systemic lupus erythematosus in 0.7% of patients. The associated

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Family history of vitiligo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st-degree relative</td>
</tr>
<tr>
<td>0–10</td>
<td>3</td>
</tr>
<tr>
<td>11–20</td>
<td>8</td>
</tr>
<tr>
<td>21–30</td>
<td>5</td>
</tr>
<tr>
<td>31–40</td>
<td>3</td>
</tr>
<tr>
<td>41–50</td>
<td>1</td>
</tr>
<tr>
<td>51–60</td>
<td>0</td>
</tr>
<tr>
<td>61–70</td>
<td>0</td>
</tr>
<tr>
<td>71–80</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>20 (19%)</td>
</tr>
</tbody>
</table>

* Cases for which data were unavailable were not included in the statistical analysis.
The cutaneous diseases noted in this study were atopic dermatitis in 8.9%, pruritus in 5.2%, leukotrichia in 3.7%, alopecia areata in 2.2%, and psoriasis and mycosis fungoides in 0.7% of patients.

Vitiligo is classified clinically into generalized, segmental, localized, acrofacial, mucosal, and universal types. Table 2 shows the types of vitiligo according to the age group. Contrary to expectations, there were no patients with the mucosal type of vitiligo in this study.

The most common site of the first vitiligo lesion was the face (total 28%; peri-orbital area 7.4%, peri-oral area 3.7%, the area of the nose 0.7%, and other areas of the face 19.3%). The next most common sites were the right lower limb (20%), left lower limb (15.6%), right hand (12.6%), left upper limb (9.6%), left hand (8.9%), left foot (8.9%), right upper limb (8.1%), neck (7.4%), right foot (5.9%), abdomen (5.2%), back (3%), scalp (2.2%), genitits (2.2%), chest (0.7%), and buttocks (0.7%).

At the time of diagnosis, the most commonly involved part of the body was the right lower limb (51%), followed by the face (49%; specifically, 14% in the peri-orbital area, 12.6% in the peri-orbital area, 5.9% in the area of the nose, and 26.6% in the other areas of the face), left lower limb (45%), right upper limb (37%), right hand (25.9%), left foot (25.2%), left hand (23.7%), right foot (22.2%), chest (16.3%), back (15.6%), neck (13.3%), abdomen (12.6%), genitits (8.9%), buttocks (4.4%), and scalp (3.7%).

The vitiligo lesions were symmetrically distributed in just over half of the patients (54%). Trichrome lesions, or lesions that consist of a tan zone of varying width between the normal and depigmented skin, were present in 21.27% of cases. Spontaneous repigmentation of depigmented skin occurred in 22% of the patients.

Table 2
Distribution of age group according to type of vitiligo.

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Type of vitiligo</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Generalized</td>
<td>Segmental</td>
</tr>
<tr>
<td>1–15</td>
<td>27</td>
<td>2</td>
</tr>
<tr>
<td>16–30</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>31–45</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>46–80</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>50 (37%)</td>
<td>2 (1.5%)</td>
</tr>
</tbody>
</table>

The goals of vitiligo treatments are repigmentation of the depigmented lesions and prevention of further progression of the disease. Table 3 shows treatment modalities according to clinical type of vitiligo.

4. Discussion

The incidence of vitiligo in our study was 0.43%, which is lower than the 2.5% reported for the King Khalid University Hospital, Riyadh, Saudi Arabia (Jarallah et al., 1993). This may be attributable to the fact that it is a tertiary care hospital with all treatment modalities available. The incidence found in our study is comparable to those reported for Denmark 0.36% (Howitz et al., 1977), Calcutta 0.46% (Das et al., 1985), and Libya 0.33% (Singh et al., 1985).

In accordance with other studies, the disease occurred predominantly in female patients in our sample (Shajil et al., 2006; Shah et al., 2008; Sedighe and Gholamhossein, 2008). In contrast, three studies have reported that vitiligo occurs predominantly in male individuals (Shankar et al., 2012; Gopal et al., 2007; Dave et al., 2002). This discrepancy has been attributed to a presumed increase in reporting of cosmetic concerns by female patients.

In our patients, the age of onset varied widely, from one to seventy-six years, with a mean age of onset of 24.5 years. This age of onset is slightly lower than the 25.59–32.4 years reported by several other general population-based studies (Shajil et al., 2006; Shankar et al., 2012; Arýcan et al., 2008; Reghu and James, 2011). Only one study has reported a lower mean age of onset, namely 23 years (Gopal et al., 2007). It seems that the age of onset of vitiligo may differ.
according to the geographic area. We found that 51.8% of cases appeared before the age of 20 years, which is comparable to other studies (Sszurko and Boon, 2008; Halder and Nootheti, 2003; Behl and Bhatia, 1971). Onset rarely occurs in infancy or old age (Lotti et al., 2008) and the incidence decreases with increasing age (Tonsi, 2004).

A positive family history of vitiligo was reported by 24.8% of our patients. This is a slightly higher percentage than the 7.5–21.93% reported by several other studies (Shajil et al., 2006; Shah et al., 2008; Shankar et al., 2012; Dave et al., 2002; Aryčan et al., 2008; Reghu and James, 2011; Behl et al., 1994). As has previously been pointed out, our study confirms that vitiligo occurs more frequently in patients with a first-degree family history of this condition (Shankar et al., 2012; Gopal et al., 2007; Reghu and James, 2011).

As previously noted, the most frequent type of factor precipitating vitiligo is physical factors, or what is known as the Koebner phenomenon (Reghu and James, 2011). In our study, only 2% of the patients reported an association between severe sunburn and vitiligo. Although this percentage differs markedly from other reports citing development of vitiligo after severe sunburn in 20% of patients, it is consistent with the skin type of our population (Nordlund, 1982). As other authors have previously pointed out, both vitiligo and thyroid disorders are significantly associated with diabetes mellitus (Reghu and James, 2011). One unanticipated finding of our study was that we identified no patients in whom vitiligo was associated with halo nevus, pernicious anemia, idiopathic guttate hypomelanosis, or tinea cruris, in contrast with the findings of earlier studies (Aryčan et al., 2008; Reghu and James, 2011).

Surprisingly, this is the first study to associate vitiligo with mycosis fungoides and multiple sclerosis. These findings should be interpreted with caution.

Given that all previous research has found the generalized type to be the most common type of vitiligo (Shajil et al., 2006; Shah et al., 2008; Shankar et al., 2012; Aryčan et al., 2008; Reghu and James, 2011; Behl et al., 1994; Martis et al., 2002), it is somewhat surprising that the most prevalent clinical pattern in our patients was the localized type. We found a broad spectrum of affected anatomical sites. In our study, the commonest initial site of involvement was the head and neck (37.6% of all patients), in contrast with the findings of Reghu, who reported that the lower limbs were the commonest initial site to develop depigmentation (Reghu and James, 2011). A possible explanation for this discrepancy is that in our culture the head and neck are exposed, whereas most other parts of the body are covered.

Published reports give varying percentages for the incidence of trichrome in vitiligo patients. One Indian study reported trichrome lesions in 66.3% of their study sample (Aryčan et al., 2008), whereas an Egyptian study reported trichrome lesions in 7.8% of vitiligo patients (Altaf et al., 2010). We found trichrome in 21.27% of our patients. In addition, spontaneous repigmentation occurred in 22% of our patients. This is consistent with previous reports, which cited rates of spontaneous repigmentation of vitiligo areas in 10–20% of patients (Lotti et al., 2008; Castanet and Ortonne, 1997).

This study documented the use of different modalities in the treatment of vitiligo: in order of frequency of use, these modalities were tacrolimus, topical steroids, narrow band UVB phototherapy, excimer laser, calcipotriene, methoxsalen and psoralen plus UVA. This wide range of treatment modalities can be explained not only by different types of vitiligo but also by different sites of body involvement. In our study, tacrolimus was more likely to be used in patients with localized vitiligo, whereas narrow band UVB phototherapy was more often used in patients with generalized vitiligo. This finding is consistent with the previous research on the use of topical calcineurin inhibitors for vitiligo repigmentation (Grimes et al., 2002, 2004; Travis et al., 2003).

5. Conclusion

This study achieved our stated purpose of determining the clinical patterns of vitiligo and its associated comorbidities in order to report the main features of this disease in Saudi Arabia. In our study, vitiligo occurred more commonly in female individuals. The mean age of onset of vitiligo was 24.5 years and the disease occurred more frequently in patients with a first-degree family history of vitiligo. Physical factors were the most frequent type of precipitating factor. Vitiligo was commonly associated with thyroid disorders and diabetes mellitus. The most important finding to emerge from this study is that localized vitiligo was the most prevalent type of vitiligo in our study sample. This research has raised many questions in need of further investigation, such as the association between vitiligo and mycosis fungoides and multiple sclerosis.

Conflict of interest

None.

References


