VITILIGO IN THE SSK COMMUNITY OF BANGALORE
(A preliminary report)

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Vitiligo among the commuity Somavamshan Sahasrarjuna Kshatriya (SSK) of Bangalore surveyed by us during February-March, 1987, was found to be characterized by an earlier age of onset and a very high (90.38%) familial incidence. This community at present is small and is believed to have migrated from Gujarat-Maharashtra border where the incidence of vitiligo in a related community, the Khatris is already high (3.6%). The results indicate that continuous inbreeding among the SSK community in Bangalore may have enhanced their genetic predisposition to this disease.

Key words : Vitiligo, inbreeding SSK community, Survey.

The Somavamsha Sahasrarjuna Kshatriya (SSK) community is believed to have migrated from Gujarat-Maharashtra border to Bangalore many centuries ago. It is a small community who have been inter-marrying since then. Leading members of this community feel that the incidence of vitiligo is high among their community as compared to other communities in the city. At their request, we have analysed the reasons for the same by investigating detailed histories of 52 cases. The analysis indicates that this community may have enhanced their susceptibility to vitiligo through inbreeding over a long period of time.

Materials and Methods

A questionaire designed to obtain general, medical and family history of the patient was prepared. Through the help of the community leaders, households suspected to have vitiligo patients were visited and case histories were recorded. A total of 52 cases were seen and the case histories recorded were analysed by routine statistical methods.

Results

There were 34 males and 18 females among the 52 cases interrogated. Majority of the patients were between 21-50 years. In 65.38% of the cases, the age at onset was less than 20 years (Fig. 1). The lowest age at onset was 5 years and the highest age at onset was 58 years. The mean age of onset for males was 23.0 years while for females it was 11.8 years.

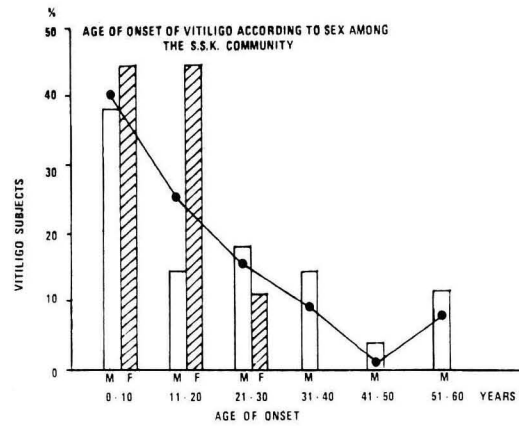

Table I shows the location of the primary lesions found in this study. The most frequent sites involved were the knee (19.2%) and the feet (17.3%), followed by hands (13.5%) and eye region (9.6%).

Majority (55.7%) of the patients would not attribute any cause for the onset of the disease. Plastic, rubber and leather were attributed as the cause for the development of this disease by 5.8% of the patients. Of the remaining.

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Table I. Incidence by location of the primary vitiliginous lesions in the SSK community.

Primary site	Percent of cases investigated in the SSK community
Knee	19.23
Hands	13.46
Ankle/feet	17.31
Eye region	9.62
Shin	7.62
Forehead	5.76
Chest	5.76
Axilla	3.85
Chin	3.85
Ear	1.92
Back	1.92
Elbow	1.92
Head/Scalp	1.92
Nape	1.92
Lips	1.92
Others/unknown	3.94

26.9% reported injury as the cause for the onset of vitiligo. Only 10% of the cases reported that they get white skin (Koebner's phenomenon) after injury, while in 11.5% trauma definitely did not lead to the development of white skin.

Vitiligo vulgaris, the commonest type of vitiligo with bilaterally symmetrical distribution of depigmented patches occurred in 82.69% of the total cases. The acro-facial type where depigmented patches occurred only in distal extremities and face, occurred in only 2 (3.85%) cases and an equal number had the focal type where the patches were unilateral. The remaining (15.38%) cases had the universalis type where the whole body was depigmented. Three of these had the memory of the spots being bilaterally distributed during the earlier stages of the disease.

Of the 52 cases, 47 (90.38%) patients of the SSK community had close family members also affected with vitiligo. Among the close relatives affected, a total of 46 people belonged to the first degree relatives, 24 belonged to the second degree relatives and 59 belonged to the third degree relatives. Preliminary genetic analysis based on the number of 1st, 2nd and 3rd degree relatives an average Indian is expected to have in a family size of 4 children, indicates that the 1st degree relatives have a higher incidence of vitiligo followed by the 2nd degree relatives, while the 3rd degree relatives have approximately the same incidence as the general population (Table II). These results suggest that vitiligo in the SSK community appears to follow the multifactorial phenomenon of inheritance.

Table II. Proportion of relatives of the vitiligo cases among the SSK community also affected by the disease.

Relatives	Affected	Estimated* incidence in percent
First degree	46	8.84
Second degree	24	3.07
Third degree	59	2.48

* This estimate is based on the number of relatives an average Indian is expected to have. The first degree relatives are father, mother, 4 brothers, sisters and patient's 4 children making a total of 10 individuals based on average Indian family size. The second degree relatives are maternal and paternal grand-parents, paternal and maternal uncles and aunts making a total of 15 individuals per patient based on average Indian family size. The third degree relatives include paternal and maternal cousins, nephews and other distant relatives. An average Indian is thought to have about 40 such relatives. The actual percentage however, remains to be calculated after detailed pedigree maps of the community become available.)

Comments

Shah et al[1] have shown that the age of onset of vitiligo among those with a family history of the disease, is much earlier than those without family history. We have observed that the age of onset of vitiligo is earlier among the SSK community as compared to the cases investigated in the general population (Fig. 1), therefore suggesting a genetic basis.

In the border area of Gujarat-Maharashtra, from where the SSK people are believed to have migrated to Bangalore, the Khatri community has the highest incidence of this disease and also has an earlier average age of onset.[2] There are a number of parallel relationships between the Khatri community of south Gujarat and the SSK community investigated here. Both belong to the Kshatriya caste and both are small-scale industrialists mostly occupied in the silk industry, looms and dyes. This community also has a high familial incidence of vitiligo. It is therefore likely that the SSK community who have migrated from these areas, may have had a higher incidence of vitiligo to start with. In the present study, we found the familial incidence of vitiligo among the SSK community to be 90.38%, the highest familial incidence of vitiligo recorded so far.[3] Detailed pedigree maps of vitiligo patients among the SSK community are yet to be made. Investigating the incidence of vitiligo among near relatives of the patients, Shah et al[1] and Hafez et al[4] have found that this disease is inherited as a multifactorial phenomenon. Preliminary analysis of the incidence of vitiligo among the near relatives of the SSK cases investigated here also suggests that vitiligo among the SSK community could be a multifactorial phenomenon. These results indicate that the SSK community having migrated from an area where the incidence of vitiligo is already high, may have, by inbreeding over the centuries increased their genetic predisposition to this disease. In addition to Bangalore the SSK community is believed to have settled down in other south Indian cities. Surveys of vitiligo cases among the SSK communities of these cities will be necessary to corroborate the above suggestions.

Mehta et al[2] have suggested that dyes used in the silk industry could be interfering with melanocyte functions leading to vitiligo in the Khatri community. Our observations in Bangalore however, reveal that several of the SSK community people employ casual labourers for the actual handling of the dyes and looms and rarely come in contact with these chemicals. The labourers themselves belonging to other communities were found to be free from vitiligo, thus supporting the above hypothesis of increased genetic predisposition as the cause for higher incidence of vitiligo in the SSK community.

At present, there is no method to detect individuals who are susceptible or carriers of the genes predisposing them to vitiligo before the actual occurrence of the disease. However, recent studies on melanocytes in culture have revealed that melanocytes from vitiligo subjects manifest decreased seeding capacities, a lag period for the onset of growth phase and lack passage capacities.[5] It is thus possible that the in vitro growth behaviour of melanocytes from susceptible and carrier individuals may differ from those of normal individuals. Such individuals in populations at large would be difficult to find. We propose that the SSK community with greater genetic predisposition to vitiligo due to inbreeding would be an ideal group to investigate carrier and susceptible individuals.

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