DIGITAL PATTERNS IN VITILIGO

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Summary

Digital patterns of hundred vitiligo patients were compared with their first degree relatives and normal controls. Significant differences were found in digital patterns of the two sexes in controls as well as patients. The digital patterns of male vitiligo patients were closer to female controls whereas female vitiligo patients were nearer to male controls. Digital patterns of the relatives were in between the patients and controls. This interesting finding is discussed in detail.

KEY WORDS : Vitiligo, Digital patterns, Dermatoglyphics.

Prints of finger, palm and foot, all together are more appropriately termed dermatoglyphics. Scientifically this term is used for the study of epidermal ridges and patterns formed by them[1]. Ridge differentiation takes place early in fetal life as a fixed and permanent character which remains unchanged throughout life. Intrauterine environmental factors may play a great role in determining these features[2]. At present there is a general agreement that the heredity of most dermatoglyphic features conforms to a polygenic transmission with each individual gene contributing a small additive effect[3]. Among the very large number of reports describing dermatoglyphic characteristics in medical disorders, only a few are well substantiated like mongolism.

Dermatoglyphic study offers some advantages. The recordings are rapid and inexpensive and the technique is non-invasive. Many investigators have tried to establish this science as a diagnostic aid and genetic guide in many genetic disorders. Vitiligo which is transmitted as an autosomal dominant disease with variable expression was chosen for the above study.

Material and Method

Unselected 50 male and 50 female vitiligo patients were taken from the Skin and V.D. out patients department of University Hospital, B. H. U. for the dermatoglyphic study. Ninety first degree relatives of vitiligo patients (50 males and 40 females) were also subjected to the above study. For comparison 50 normal controls (25 males and 25 females) were selected keeping in view that none of them was suffering or even gave any personal or family history of the above disease or

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any other congenital or genetic disorder known to affect dermatoglyphic characteristics.

Prints of palm and fingers of both hands were taken for each individual by rubber-roller and ink method and digital patterns were analysed according to Galton's system of classification[3]. No further sub-classification has been made. Right and left hand showed no significant differences; therefore these were not considered separately. Individual digit has also not been considered separately in this paper to avoid confusion.

Observations

Control-Irrespective of the sex, the most common patterns seen on the digits of both sides were loop (55%), followed by whorl (37%) and arch (8%). The frequency of whorl was seen significantly higher in males (44.4%) than females (29.6%) while loop and arch were more in females (60.4% and 10%) ($P < 0.05$) Table 1.

TABLE 1

Percentage total digital patterns in Vitiligo Patients and relations

Patterns	Male			Female		
	Control	Patient	Relation	Control	Patient	Relation
Whorl	44 4	42.8	43.0	29.6	43.0	40.4
Loop	49.6	45.6	51.3	60.4	51.0	55.2
Arch	6.0	11.6	5.7	10.0	6.0	4.4

Patients & Relatives

Significant differences were found in male vitiligo patients and their relatives in comparison to controls as regards the frequency of digital pattern ($P < 0.01$). The whorl was found to be significantly low in patients and relatives (42.8 and 43%). Arch was increased in patients while loop was increased in relations. In female patients and their relations, the frequency of loop and arch was decreased while the frequency of whorl was increased in comparison to controls. The differences were highly significant ($P < 0.005$).

Discussion

Dermatoglyphic data on an adequate control group have not been published so far. The reports we have all include different categories of control usually based on small samples collected under biased conditions like hospitals etc. This lack of adequate control data casts serious doubts on many of the so called significant findings reported in the literature. Our observations regarding the digital patterns in normal Indians are in full accordance with other published reports. Females have generally lower frequencies of whorls but a higher number of loops and arches. This tendency towards simpler pattern in females are practically universal in ethnic groups[3].

Vitiligo patients showed significant differences in the digital patterns as compared to the normals. Only few reports are available in the literature but our observations generally agree with other similar reports. An increase in simpler pattern (arch) in male patients and complex pattern (whorl) in female patients were also reported by Verma and Jain[4] in 20 male and 20 female patients. But our findings differ from those of Sahsrabuddhe et al[5] who have noticed increase frequency of arches in 25 female patients. Findings of both the above observers were statistically insignificant. No significant difference was observed in the digital patterns of male and female relations although significant sex differences have been noted in the case of controls and patients in this study as well as other studies. A high degree of similarity in dermatoglyphic trait has been

found among close relatives than among unrelated persons, but in this study the male relatives of vitiligo patients are closer to female relatives rather than male patients. Similar resemblances were noticed in female patients. The closer resemblances in the digital patterns of male and female relatives could be explained probably on the basis that the changes in digital patterns in male patients tend towards female controls and vice versa. When all the observations were compared a clear trend towards the disease is seen in the case of males by decrease in whorls and in case of females by increase in whorls. Relations are in between the patients and controls.

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Page 4. Author's name Please read P. K. Guha

In column 1, Page 6, Para 2, after 6th line, read "lepromatous 82.3% compared to only 2.2% of the" before line 7.