SUMMARY & CONCLUSIONS
The term "Dermatoglyphics" was coined by Cummins and Midlo in 1926 to describe the fine grooves and ridges in the epidermis which are known to depict genetic constitution.

Genetic predisposition is one of the important etiological factors in the genesis of diabetes mellitus. Consequently, it was thought that a study of palmar dermatoglyphics may yield some marker in diabetes mellitus cases and their first blood relatives. It was with this aim and object that the present work was taken up.

Palmar dermatoglyphics were analysed in a total of 280 subjects which included 100 consecutive cases of diabetes mellitus (50 early onset and 50 late onset) 60 their first blood relatives and 120 age and sex matched normal healthy subjects.

Cotterman technique of taking palmar prints was used. These prints were analysed with the help of a magnifying lens. The four standard parameters of dermatoglyphics studied in the present study, were the following:

1. Digit patterns.
2. Ridge count from triradial point to point of core.
3. Axial triradii
4. Rate angle.
The significant findings were in digit patterns of diabetes mellitus and their first blood relatives. In early onset male diabetics there was high incidence of whorls and low incidence of loops. In late onset male diabetics there was high incidence of loops and low incidence of whorls. In both early and late onset female diabetics there was low incidence of loops. In first blood relative males there was high incidence of loops and low incidence of whorls. In first blood relative females there was low incidence of whorls and loops. The incidence of arches were high in both males and females in diabetes mellitus as well as in first blood relatives. These differences were statistically significant ($P < 0.05$).

The other dermatoglyphic parameters viz. mean total finger ridge count (TFRC), axial triradii and mean atd angle were largely similar to controls and the difference if any were not statistically significant.

Among first blood relatives studied dermatoglyphic patterns in males were similar to those of late onset male diabetics. There was less similarity in first blood relative females to late onset female diabetics. These findings indicate that there is strong genetic factor in late onset diabetes mellitus as compared to early onset and in identical twins, male twins tended to be concordant more often than female twins (Tattersall, 1972; Pyke, 1976).
The dermatoglyphic variations in diabetes mellitus cases and first blood relatives from controls may be suggestive of an external imprint of genetic variation. Present methods of study of dermatoglyphics is not of much help in diagnosis of diabetes mellitus, however certain significant differences have been noticed in the diabetes mellitus cases and their first blood relatives. The natural history of diabetes mellitus has prediabetic, latent chemical diabetic phase before it manifests clinico-biochemically. It has been clearly established in recent years that diabetes mellitus is genetically heterogenous group of disorders that share glucose intolerance in common. Palmar dermatoglyphics may be helpful in studying the heterogeneity of diabetes mellitus and to identify susceptible individuals to non-susceptible one.

...
CONCLUSIONS

This study has revealed certain significant findings in diabetes mellitus and their first blood relatives. However it will be too preliminary to draw definite conclusions on these findings at this stage in diagnosis of diabetes mellitus. The findings are as follows:

1. Higher incidence of whorls and lower incidence of loops in early onset male diabetics.

2. Higher incidence of loops and lower incidence of whorls in late onset male diabetics.

3. Lower incidence of loops in early and late onset female diabetics.

4. Higher incidence of loops and lower incidence of whorls in first blood relative males.

5. Lower incidence of whorls and loops in first blood relative females.

6. Higher incidence of arches in both males and females in diabetes mellitus as well as in first blood relatives.

...