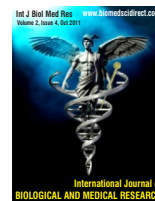




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### Short report

## Dermatoglyphic patterns in patients of Bronchial Asthma – A Quantitative study

Amrut A. Mahajan<sup>a\*</sup>, K. K. Gour<sup>b</sup>,

<sup>a</sup>Prof. and Head, Department of Anatomy, L.N. Medical College, Bhopal, M.P, India

<sup>b</sup>Asstt. Prof., Department of Anatomy, L.N. Medical College, Bhopal, M.P, India

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#### ABSTRACT

Background: The present study was carried out to correlate the dermatoglyphic quantitative parameters in patients of bronchial asthma. Methods: Dermatoglyphic prints were obtained from both hands of 57 patients of bronchial asthma and 57 first degree relatives of these patients were selected to establish familiar tendency of occurrence of the disease. 57 normal healthy individuals, without family history of bronchial asthma, were selected as control group. The groups were labelled as Group A, B and C. The quantitative parameters like a-b ridge count, total finger ridge count (TFRC) and atd angle were studied in the above mentioned three study groups. Results: Higher values of a-b ridge count were found in groups A and B as compared with group C. Conclusions: Higher values of a-b ridge count can be used as one of the diagnostic criterion for patients with bronchial asthma.

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### 1. Introduction

In early foetal life dermal ridge differentiation occurs. It is genetically determined, and is influenced by physical, topographical and environmental forces. Probably, the blood supply and nerve supply also modulate the dermatoglyphic patterns. Recently the dermatoglyphic patterns have proved to be of diagnostic value in certain clinical disorders associated with chromosomal and developmental defects like mongolism, Turner's syndrome, cardiovascular disease, diabetes and schizophrenia.

Bronchial asthma is also influenced by genetic factors. Many members of the family can be affected by the disease. As the dermatoglyphic patterns are also genetically determined, these two may have a correlation which could be of help in predicting the occurrence of bronchial asthma among relatives of patients suffering from the disease. However the studies on correlation between dermatoglyphic patterns in bronchial asthma patients are but a few. So the present work was undertaken to study –

1. To find out a specific dermatoglyphic parameters in the patients with bronchial asthma which may have diagnostic value.
2. To find out the dermatoglyphic parameters in the first degree relatives to prove the familiar tendency of the disease.

### 2. Materials and Methods

The dermatoglyphic prints from both hands of group A, group B and group C (57 no. each) were obtained for present study. The prints were taken using kores duplicating ink on plain white glossy drawing paper. The prints were studied with the help of the hand lens.

The following parameters were studied, tabulated and analysed by statistical methods

1. a-b ridge count.
2. TFRC.
3. atd angle.

### Figure 1 - Dermatoglyphic fingertip patterns for TFRC



Loop

\* Corresponding Author : Amrut A. Mahajan

Prof. and Head, Department of Anatomy, L.N. Medical College, Bhopal, M.P, India

Email: [dr.amrutmahajan@gmail.com](mailto:dr.amrutmahajan@gmail.com)

[drkkgour@gmail.com](mailto:drkkgour@gmail.com)

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Figure 2 - Dermatoglyphic palmar patterns



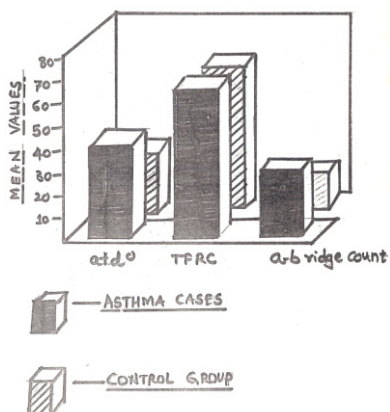
### 3. Results

1. Higher values of a-b ridge count in group - A and group - B as compared with group C.
2. No significant difference of values of TFRC and atd angle in group A and B as compared with group C.

**Table 1. Percentage frequency of different quantitative parameters in the three study groups**

Parameter	Group - A		Group - B		Group - C	
	No.	Mean ± SD	No.	Mean ± SD	No.	Mean ± SD
a-b ridge count	3705	32.5 ± 3.858	3933	34.5 ± 4.149	3591	31.5 ± 3.553
TFRC	7353	64.5 ± 10.944	7581	66.5 ± 4.723	8379	73.5 ± 12.335
atd angle	4572	40.12 ± 5.385	4679	41.04 ± 3.686	4537	39.83 ± 2.329

**Figure 3. Graph showing comparison of mean value of atd angle, TFRC and a-b ridge count in group A and group C**



### 4. Discussion

Various diagnostic criteria are available for diagnosis of bronchial asthma. Apart from advances in medical diagnostic procedures, the diagnosis of bronchial asthma is difficult, as patients with asthma are heterogenous and they present a wide spectrum of signs and symptoms which vary in severity, from patient to patient and from season to season. So to help the diagnosis of bronchial asthma, the dermatoglyphic patterns may prove a great help.

However the studies on the correlation between dermatoglyphic patterns in asthma patients. Cumins and Midlo used dermatoglyphics as a diagnostic aid in medical diseases. Since then it has become a valuable tool in medicolegal, anthropological and genetic studies.

In the present study, a-b ridge count, TFRC and atd angle were studied in 57 cases of chronic bronchial asthma, 57 first degree relatives of patients of bronchial asthma and 57 controls. Significantly higher values of a-b ridge count in patients of bronchial asthma were found. Similar observations were reported by M. Gupta, A. Sood and V. Bharrohoke.

### 5. Conclusions

1. Increased values of a-b ridge count in patients of bronchial asthma can be used as one of the diagnostic criteria for bronchial asthma.
2. No significant difference of the values of TFRC and atd angle were found in group A (patients) and group B (relatives) as compared to group C (controls).

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