Short Communication

A Study on palmar axial triradius among the Autistic Patients of Bengalee Hindu caste Population of West Bengal

Biswarup Dey¹, Jyoti Ratan Ghosh² and Arup Ratan Bandyopadhyay*¹

¹Department of Anthropology, University College of Science, Technology & Agriculture, University of Calcutta, West Bengal, India
²Department of Anthropology, Visva Bharati, Birbhum, West Bengal, India

*Correspondence Info:
Arup Ratan Bandyopadhyay,
Department of Anthropology,
University College of Science, Technology & Agriculture,
University of Calcutta, West Bengal, India.
E-mail: arup.cu@gmail.com

Abstract
On the background of the studies on the association of neurodevelopmental disorders and dermatoglyphics variation, the present attempt being the first study from India report the palmar dermatoglyphics variability in terms of incidences of palmar axial triradii among the autistic patients from Bengalee Hindu caste population of West Bengal. The result demonstrated significant (p<0.001) excess of double axial triradii (t") among the 100 autistic patients compared to the controls for both hands. The present study vindicated that double axial triradii (t") might be taken as additional feature for the prognosis of autism among the Bengalee Hindu caste population.

Keywords: Palmar axial triradius, Autism, Bengalee Hindu caste population

1. Introduction
Epidermal ridges of the dermatoglyphic patterns of fingers and palms are formed between the 11th and 24th weeks of gestation and become unaltered¹. It is also reported that critical growth of the brain occur during this period and since the skin and the brain develop from the same ectoderm, therefore, dermatoglyphic variations are informative for early developmental brain commotion². In the present paper we report the palmar dermatoglyphic characteristics namely, the incidences of axial triradius (t) among the adult 100 autistic patients (male 67 and female 33) of Bengalee Hindu caste population of West Bengal, India. Autism spectrum disorders (ASD) are a heterogenous group of neurodevelopmental disorders that are behaviorally defined and characterized by impairments in communication and social interaction along with restrictive and repetitive behaviors³. To best of the knowledge the present paper is the first attempt from India regarding palmar dermatoglyphic (axial triradius) characteristics of autism.

2. Materials and Methods
To achieve the purpose, bilateral palm prints of diagnosed 100 autistic patients (male 67 and female 33) of Bengalee Hindu caste population of West Bengal, India and 100 apparently healthy individuals (male 55 and female 55) from the same area and population without any family history of autism have been collected using standard ink roller technique⁴.

3. Results and Discussion
The result revealed significant (p<0.001) excess of double axial triradii (t") among the autistic patients compared to the controls for both hands (Table 1).

<table>
<thead>
<tr>
<th></th>
<th>Autistic patients</th>
<th>Control</th>
<th>Chisq (1 df)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 100</td>
<td>n = 100</td>
<td></td>
</tr>
<tr>
<td>Left hand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single axial triradius t</td>
<td>63(63.00)</td>
<td>93 (93.00)</td>
<td>26.224*</td>
</tr>
<tr>
<td>Double axial triradii (t&quot;)</td>
<td>37(37.00)</td>
<td>7 (7.00)</td>
<td></td>
</tr>
<tr>
<td>Right hand</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single axial triradius t</td>
<td>72(72.00)</td>
<td>95(95.00)</td>
<td>19.198*</td>
</tr>
<tr>
<td>Double axial triradii (t&quot;)</td>
<td>28(28.00)</td>
<td>5 (5.00)</td>
<td></td>
</tr>
</tbody>
</table>

Figures in the (parenthesis) denotes the percentage; *p<0.001

The results obtained in the present study do not contradict the hypothesis that genetic factors particularly, the significant association⁵ of SNP on chromosome 5p15 (between SEMA5A and TAS2R1) and expression of SEMA5A is reduced in brains from autistic patients.

4. Conclusion
Therefore, the present study envisaged the relationship of neurodevelopmental disorders and dermatoglyphics and as well as imperative use of dermatoglyphics such as double axial triradii (t") might be taken as additional feature for the prognosis of autism among the Bengalee Hindu caste population.
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