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Dermatoglyphics as markers of prenatal disturbances in schizophrenia: a case-control study

Birsen ÖZYURT¹, Ahmet SONGUR², Mustafa SARSILMAZ³, Ömer AKYOL⁴, Mustafa NAMLI⁵, Reha DEMİREL⁶

¹ Department of Anatomy, Faculty of Medicine, Gaziosmanpaşa University, Tokat - TURKEY

² Department of Anatomy, Faculty of Medicine, Kocatepe University, Afyon - TURKEY

³ Department of Anatomy, Faculty of Medicine, Fırat University, Elazığ - TURKEY

⁴ Department of Biochemistry, Faculty of Medicine, Hacettepe University, Ankara - TURKEY

⁵ Psychiatry Hospital, Elazığ - TURKEY

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 [Authors](#)



medsci@tubitak.gov.tr

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Abstract: Several studies have reported the importance of dermatoglyphics as markers of a prenatal disturbance in patients with schizophrenia. Due to the fact that finger- and handprints are formed by the end of the second trimester, they may provide clues to disturbances in early development. The aim of this study was to determine specific dermatoglyphical frequencies in a sample of patients with schizophrenia and normal controls. Materials and methods: Fingerprints and palm prints were obtained from 45 schizophrenic patients as well as 45 healthy controls. The dermatoglyphic patterns on the fingers (total finger ridge count [TFRC]) and palms (a-b, b-c, and c-d ridge counts; total a-b ridge count [TABRC]; total c-d ridge count [TCDRC]; and atd angle) were evaluated. Results: There was a significant decrease in both the TABRC ($P < 0.01$ for males and $P < 0.001$ for females) and the TCDRC ($P < 0.05$ for males and $P < 0.001$ for females) in the schizophrenic group compared with the control group. There was no significant difference in the TFRC in the male schizophrenic group compared with the male control group; however, there was a significant decrease in the TFRC in the female schizophrenic group compared with both the female control ($P < 0.005$) and male schizophrenic groups ($P < 0.003$). We found a significant decrease in both the right and left hand a-b and c-d ridge counts in female schizophrenics compared with female controls ($P < 0.01$ and $P < 0.01$, respectively), whereas this decrease was not significant with respect to the atd angle. On the other hand, it was determined that the left hand atd angle, a-b ridge count, and c-d ridge count were significantly decreased in male schizophrenics compared with male controls ($P < 0.01$ for the atd angle, $P < 0.01$ for the a-b ridge count, and $P < 0.05$ for the c-d ridge count), while there were no significant differences in the right hand atd angle, a-b ridge count, or c-d ridge count in the male schizophrenics compared with the male controls. Conclusion: The frequencies of specific dermatoglyphic patterns were statistically different between schizophrenics and healthy controls with respect to hand (left or right) and gender. Therefore, dermatoglyphic markers may be indicative of an early disturbance in brain development in schizophrenics and may help elucidate the gender differences which exist in schizophrenia.

Key words: Schizophrenia, dermatoglyphic, gender comparison, finger ridge count, a-b ridge count, c-d ridge count

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