OP-003

https://doi.org/10.5080/61upk.ozt422

INVESTIGATION OF MAO-A GENE, MIR-132-3P, AND MIR-330-3P ACTIVITY IN ADOLESCENTS WITH NON-SUICIDAL SELF-INJURY

Raziye Ülkü Kıcalı[1], Nilfer Sahin[1], Tuba Gökdoğan Edgünlü[2]

[1]Department of Child and Adolescent Psychiatry, Faculty of Medicine, Muğla Sıtkı Koçman University, Muğla, Türkiye
[2]Department of Medical Biology, Division of Basic Medical Sciences, Faculty of Medicine, Muğla Sıtkı Koçman University, Muğla, Türkiye

BACKGROUND AND AIM: Non-suicidal self-injury (NSSI) is defined as deliberate and repetitive acts of direct bodily harm without suicidal intent. Previous studies implicate MAO-A and microRNAs in psychiatric disorders. The aim of this study was to investigate the relationship between NSSI and the monoamine oxidase A (MAO-A) gene, and the microRNAs miR-132-3p and miR-330-3p, in adolescents diagnosed with NSSI.

METHODS: The study included 42 adolescents aged 12–18 years with NSSI and 42 age- and sex-matched healthy controls. Ethics approval was obtained from the İzmir Bakırçay University Non-Interventional Clinical Research Ethics Committee (Decision No: 2249, 14.05.2025). To determine MAO-A gene, miR-132-3p and miR-330-3p expression levels, 5 mL of venous blood samples were collected from all participants. The miRNAs investigated in this study were selected based on data obtained from the miRDB database (https: //mirdb.org/mirdb/index.html) and evidence from previous studies in the literature.

RESULTS: The results demonstrated that MAO-A gene expression levels were significantly higher in the NSSI group compared to the control group, whereas miR-132-3p and miR-330-3p expression levels were significantly lower in the NSSI group.

DISCUSSION: The elevated MAO-A expression observed in adolescents with NSSI supports existing evidence implicating monoaminergic dysregulation in affective instability and impulsive behaviors. Previous studies have emphasized the interaction between MAOA-related vulnerability and environmental stressors in self-injurious behavior, and our findings extend this perspective at the expression level. The decreased levels of miR-132-3p and miR-330-3p suggest disrupted post-transcriptional regulation, consistent with literature linking these microRNAs to stress response, neuroplasticity, and mood-related psychopathology. Together, these findings support a biologically informed model of NSSI vulnerability.

CONCLUSIONS: The findings highlight the importance of addressing NSSI as a multidimensional phenomenon and integrating biological markers into clinical assessments. Such integration may enhance risk prediction and support the development of personalized preventive and therapeutic strategies.

Keywords: Adolescent, MAO-A, miR-132-3p, miR-330-3p, Non-suicidal self-injury