among SC users, compared to healthy controls. Findings of this study need to be replicated with neuropsychiatric examination among both patients and controls in larger samples.

**Keywords:** cerebellum, synthetic cannabinoids, thalamus

**References:**

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**[Abstract:0272] Schizophrenia and other psychotic disorders**

**Evaluation of cortisol and ACTH levels in drug-naive adolescents with first-episode psychosis**

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**INTRODUCTION:** Current evidence indicates the role of cortisol in psychosis; however, the relationship between psychological symptoms and cortisol is not clear. It has been reported that cortisol has an indirect effect on the pathophysiology of psychosis. Studies on untreated patients with first-episode psychosis have mostly found HPA axis hyperactivity. Brain maturation continues during adolescence and is vulnerable to stress. To our knowledge, there is no study that evaluated cortisol and ACTH levels in adolescent patients with FEP. The aim of the present study was to evaluate cortisol and ACTH levels as indicators of the HPA axis activity in adolescent patients who were included in the study with a diagnosis of FEP and diagnosed with EOS after a follow-up period of six months. Furthermore, the present study evaluated the presence of a relationship between psychosis symptom severity and cortisol and ACTH levels.

**METHOD:**

**Study Sample:** The study was conducted in the Department of Child Psychiatry at Dicle University. The study data were collected between March 2013 and January 2014. A total of 23 adolescent patients aged between 11-17 years, who did not receive prior therapy and who were diagnosed with psychosis according to DSM-4 criteria, and 23 age- and gender-matched healthy adolescent controls aged between 11-17 years, who did not have a medical or neurological disorder, were included in the study. The parents of the patients provided informed consent for their voluntary participation in the study. Approval was obtained for the study from the Non-interventional Clinical Research Ethics Committee at Dicle University Faculty of Medicine.

**Study Procedures:** Sociodemographic features of the participants were obtained and a clinical data form was completed. A structured psychiatric interview (K-SADS-PL and PANSS) was conducted with the participants. The clinical global impression (CGI) scale was used to evaluate disease severity. Finally, a 2 ml venous blood sample was obtained for biochemical tests.

**Forms and Scales:**

**Sociodemographic Data and Clinical Data Form:** This form contains questions about age, gender, education level, and age, education level and occupation of the parents, consanguinity between parents, number of siblings, birth order among siblings, history of a psychiatric disorder in family members and relatives, family history of alcohol/substance abuse, height, and weight.

**Kiddie Schedule for Affective Disorders and Schizophrenia, Present and Lifetime version (K-SADS-PL):** The original scale was developed by Kaufman et al. It was adapted to the Turkish language by Gökler et al. in 2004. K-SADS-PL is administered during an interview with the parents and children, and the final evaluation is performed using input from all data sources. The scale evaluates the presence of psychopathological conditions in children and adolescents.

**The Positive and Negative Symptom Scale (PANSS):** This scale is a semi-structured interview tool developed by Kay et al. in 1987, evaluated for its validity and reliability by Kostakoğlu et al. in 1999. The scale consists of 30 items evaluating positive and negative symptoms and providing information about general status of psychopathological condition.

**The Clinical Global Impression Scale (CGI):** The Clinical Global Impression Scale is a standardized evaluation tool used to rate disease...
severity, disease course over time, drug effects considering the clinical condition of the patient, and severity of side effects. CGI-I is rated on a 7-point scale from 1 (normal) to 7 (most severe patients).

**Biochemical Analysis:** The blood samples were obtained in the morning between 09:00 and 12:00. The samples were collected in gel tubes. After withdrawal, blood samples were allowed to rest for 15 minutes for clotting. Then, blood samples were centrifuged at 5000 rpm for six minutes. The sera were transferred to 1.5 ml polypropylene tubes and stored at -80°C until analysis. Cortisol and ACTH levels were evaluated using the ELISA method and ready-to-use kits.

**Statistical Analysis:** The statistical analysis was performed using SPSS 15.0 software package. A p value <0.05 was considered statistically significant.

**RESULTS:** The mean age was 14.5±1.4 years among adolescents in the FEP group (range: 8-17 years; M/F: 11/15) and 14.7±1.5 years in the control group (range: 11-17, M/F: 8/15). There was no significant difference between the groups in terms of age and gender, employment status of the parents, and family history of alcohol or substance abuse. Past medical history of the family members and first-degree relatives of seven patients (30%) in the FEP group was remarkable for psychiatric disorders, while there was no history of psychiatric disorders in the control group (p=0.02). The rate of consanguineous marriages was significantly higher in the FEP group (p=0.02). In the FEP group, the rate of consanguineous marriage in the parents was higher among male patients (p=0.045). In addition, the history of psychiatric disorders in the family members and first-degree relatives was more common among male patients, although the difference was not statistically significant (p=0.20). There was no significant difference between the groups in terms of smoking. Education level of the participants in terms of years, age of the parents, number of siblings, and BMI values are presented in Table 1. There was no significant difference between the patients and the control group in terms of cortisol and ACTH levels. There was no significant relationship between PANSS and CGI scores and cortisol and ACTH levels. Cortisol and ACTH levels were significantly higher in male patients with FEP compared to male patients in the control group (p=0.04 and p=0.02, respectively). There was no difference in these measures in females. The data pertaining to biochemical analyzes are presented in Table 2. The clinical features of the patients in the FEP group are presented in Table 3.

**DISCUSSION:** The most important finding of the present study is the detection of higher cortisol and ACTH levels in male patients with FEP. In addition, the rate of consanguineous marriage in the parents was higher in male patients, suggesting a genetic loading. The importance of the vulnerability-stress model increases in the etiology and pathogenesis of psychosis. According to this model, predisposing biological factors increase the vulnerability of an individual to stress and predispose to the development of psychosis under disturbing environmental conditions. The increase in cortisol levels has been suggested to occur before disease onset and predispose to disease development. The patients with psychosis are also known to exhibit intolerance and sensitivity to stressful stimulations. Trauma sustained in early periods of life causes hippocampal damage, and this in turn causes increased sensitivity to the development of psychosis.

There was no significant difference between the patients and the control group in terms of cortisol and ACTH levels. Of four studies that measured cortisol levels in the serum similar to our study, two found elevated cortisol levels in the FEP group, while the other two studies found no difference. Of seven studies that measured cortisol levels in the plasma, none found a significant difference. Cortisol levels were elevated in almost all patients above 29.5 years of age.

Another finding of the present study is the lack of a significant relationship between psychosis symptom severity and cortisol and ACTH levels. Almost all studies having similar design to our study have failed to demonstrate a significant relationship. However, one study reported a negative correlation between plasma cortisol level and PANSS positive score, and another study reported a positive correlation between PANSS negative score and cortisol levels.

In conclusion, although there was no significant difference between patients in the FEP group and healthy controls in terms of cortisol and ACTH levels, cortisol and ACTH levels were higher in male patients in the FEP group. In addition, the rate of consanguineous marriage was higher among the parents of patients with FEP. The increase in cortisol levels has been suggested to occur before disease onset and predispose to disease development. We consider that individuals with genetic loading regarding psychosis must be more closely monitored for the activity of the HPA axis.

**Keywords:** cortisol, first-episode psychosis, HPA axis

**References:**