**Objectives:** to evaluate the effect of a single dose of intranasal OXT (24UI) on affective empathy in individuals with refractory schizophrenia and healthy controls.
**Methods:** a double-blind, randomized, placebo-controlled clinical trial was conducted. A convenience sample of 51 adult men (mean age 34.4 ± 7.6, >10 years of education) was recruited, 20 of whom were diagnosed with refractory schizophrenia according to the DSM-5 (exclusively using clozapine or clozapine + mood stabilizer and/or benzodiazepine) and 31 healthy controls. They were randomized into four groups and received OXT or placebo (PLA – vehicle: SCH-OXT (N=11), SHC-PLA (N=9), HC-OXT (N=15), HC-PLA (N= 16)). Before and after 50 minutes of administering the substance, they performed an affective empathy task (Multifaceted Emphaty Test – MET).
**Results:** the baseline levels of affective empathy of patients with schizophrenia were lower compared to healthy controls when faced with negative stimuli (p=0.003), but not positive ones (p=0.39). After the administration of OXT and PLA (post-pre), a small increase in empathy levels was observed in all groups, which did not reach statistical significance (positive stimuli: ΔSCH-OXT = 0.16±1.08; ΔSHC-PLA= 0.53±1.44, ΔHC-OXT= 0.02±0.67, ΔHC-PLA= 0.24±0.45, p=0.85; negative stimuli: ΔSCH-OXT = 0.20 ±1.31; ΔSHC-PLA= 1.16±0.79, ΔHC-OXT= 0.12±0.99, ΔHC-PLA= 0.31±0.57, p=0.11).
**Conclusions:** the acute effects of intranasal OXT did not favor improvements in the levels of affective empathy, either in patients with schizophrenia or in healthy controls, contrary to the hypotheses of this study. The limited sample size and context-dependent aspects of OXT may explain these findings. These methodological limitations must be overcome in future studies. The effects associated with chronic use of the hormone should be the subject of future studies.

**Disclosure of Interest:** None Declared

## EPV1006

## Lymphocyte level and selected cognitive functions in patients with schizophrenia – preliminary results

B. Nycz and K. Krysta*

Department of Rehabilitation Psychiatry, Medical University of Silesia, Katowice, Poland
*Corresponding author.
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**Introduction:** Schizophrenia is a mental disorder characterized by negative symptoms, such as cognitive impairment. Recent reports indicate the importance of the immune system in the pathophysiology of schizophrenia. The development of inflammation affects cognitive functioning.
**Objectives:** The aim of the study was to analyze the association between the level of lymphocytes in venous blood and selected cognitive functions in patients with schizophrenia.
**Methods:** Lymphocyte levels were determined in the venous blood of patients suffering from schizophrenia and the control group. Additionally, a verbal fluency test (VFT) and a Stroop test were conducted on the same day. The VFT evaluates the ability to express words, and the Stroop test assesses verbal working memory. The inclusion criteria were age up to fifty years, and for the study group – diagnosis of schizophrenia and treatment with neuroleptics. Exclusion criteria included organic brain diseases, electroconvulsive therapy, and use of benzodiazepines within 48 hours before the study. Currently, six patients and six healthy people have been studied.
**Results:** Patients diagnosed with schizophrenia have an increased lymphocyte concentration in the blood compared to healthy individuals constituting the control group. There are discrepancies in the results of the phonemic fluency test, no significant differences were found between schizophrenics and the control group. Healthy men and women achieved higher results in the semantic fluency test compared to men and women with schizophrenia. Women constituting the control group achieved higher results in the Stroop test compared to women suffering from schizophrenia. Table 1 illustrates the concentration of lymphocytes in venous blood and the number of points in the phonemic fluency test, semantic fluency test, and in the Stroop test of the study and the control groups.
**Image:**

| People included in the study | Sex | Concentration of lymphocytes in venous blood [K/uL] | Number of points in the phonemic fluency test | Number of points in the semantic fluency test | Number of points in the Stroop test |
|---|---|---|---|---|---|
| Study group | Male | 1,22 | 40 | 47 | 20 |
| | | 1,65 | 30 | 44 | 17 |
| | | 2,13 | 40 | 45 | 20 |
| | | 1,53 | 34 | 41 | 20 |
| | Female | 1,6 | 33 | 44 | 36 |
| | | 1,61 | 40 | 62 | 21 |
| Control group | Male | 2,7 | 14 | 27 | 30 |
| | | 1,51 | 32 | 32 | 39 |
| | | 1,53 | 26 | 26 | 46 |
| | | 4,33 | 51 | 46 | 33 |
| | Female | 1,91 | 39 | 41 | 25 |
| | | 1,53 | 59 | 52 | 22 |

**Conclusions:** Patients with schizophrenia are characterized by higher levels of immune system parameters and worse results in terms of semantic fluency. Men with schizophrenia showed no verbal working memory deficits. In turn, women with schizophrenia obtained worse results in the verbal working memory test. In conclusion, there is evidence of immune system activation in schizophrenia, which affects the cognitive functioning of patients.

**Disclosure of Interest:** None Declared

## EPV1008

## The SLC6A1 Mutation Schizophrenia case — A Comprehensive Case Study With iPSC Generation

V. Mikhailova[1], N. Kondratyev[1], M. Alfimova[1], V. Kaleda[1], T. Lezheiko[1], M. Ublinsky[2], V. Ushakov[3,4,5], I. Lebedeva[1], A. Galiakberova[6,7], A. Artyuhov[6], E. Dashinimaev[6,8,9] and V. Golimbet[1]*

[1]Clinical Genetics Laboratory, Mental Health Research Center; [2]Department of Radiation Diagnostics, Clinical and Research Institute of Emergency Pediatric Surgery and Trauma; [3]Institute for

Advanced Brain Research Lomonosov Moscow State University; [4]N.A. Alekseyev Psychiatric Clinical Hospital No.1; [5]National Research Nuclear University MEPhI; [6]Center for Precision Genome Editing and Genetic Technologies for Biomedicine, Pirogov Russian National Research Medical University; [7]Faculty of Biology, Lomonosov Moscow State University; [8]Department of Bioinformatics, Koltzov Institute of Developmental Biology, Russian Academy of Sciences and [9]Moscow Institute of Physics and Technology (State University), Moscow, Russian Federation
*Corresponding author.
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**Introduction:** The main finding of a large-scale collaborative study (Rees et al. Nat Neurosci 2020;23(2) 179-184), which focused on *de novo* mutations in schizophrenia, was the discovery of an enrichment of these mutations in the *SLC6A1* gene. This gene encodes the gamma-aminobutyric acid (GABA) transporter GAT1, thereby encouraging further research into novel schizophrenia targets within the GABA pathway. However, the gene was not highlighted in recent schizophrenia genetic studies, while typically pathogenic *SLC6A1* mutations result in epilepsy, motor dysfunction, autistic spectrum disorder (ASD) and developmental delay. The absence of genetic replication for *SLC6A1*'s involvement in schizophrenia and the differing clinical spectrum for *SLC6A1* mutations led us to study in depth one of the only three original probands from the Rees et al. 2020 study.
**Objectives:** In our comprehensive case study, we delved deep into the relationship between the SLC6A1 mutation and schizophrenia.
**Methods:** Our subject, a patient who first presented with acute mania symptoms at age 15 and was later diagnosed with schizophrenia, carried the SLC6A1 Arg211Cys mutation. Over a detailed 25-year follow-up, we conducted an array of assessments and tests, including cognitive testing, personality assessments, EEG, and 1H-MRS.
**Results:** Notably, we discovered abnormal GABA levels, potentially indicating a dysfunction in GABA reuptake, adding a new layer of complexity to our understanding. Further analysis revealed a significant correlation between the patient's clinical picture and a polygenic background, rather than the SLC6A1 mutation. Despite having a high polygenic risk score for bipolar disorder, the dominant features of his condition were more representative of schizophrenia. Interestingly, neither the patient nor his father, who also showed a higher BP PRS, had a diagnosis of bipolar disorder. The pathogenic significance of the mutation warrants investigation in cells of neuronal origin. We generated induced pluripotent stem cells (iPSC) from the patient and his parents. This approach provides us with a platform for future investigations into the pathogenic significance of the mutation in neuronal cells. The Human Pluripotent Stem Cell Registry accession numbers of those cells are MHRCCGi001-A (patient), MHRCCGi005-A (mother) and MHRCCGi004-A (father).
**Conclusions:** In the presented case the clinical picture is rather explained by the polygenic background than by the SLC6A1 Arg211Cys mutation. The study is supported by Russian Science Foundation, grant 21-15-00124 (https://rscf.ru/project/21-15-00124)

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## EPP0274

## Short-chain fatty acids in schizophrenia: are they affected by a depressive state?

M. Couce-Sánchez[1]*, G. Paniagua[1,2], L. González-Blanco[1,2,3,4], A. García-Fernández[2], C. Martínez-Cao[2], C. Sabater[4], A. Margolles[4], J. Bobes[2,3,4], M. P. García-Portilla[1,2,3,4] and P. Sáiz[1,2,3,4]

[1]AGC Salud Mental IV, SESPA; [2]Psychiatry, University of Oviedo; [3]G05, CIBERSAM and [4]ISPA, Oviedo, Spain
*Corresponding author.
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**Introduction:** Short-chain fatty acids (SCFA) are bacterial metabolites that, within microbiome-gut-brain axis, make a promising research line on etiopathology of mental diseases like schizophrenia (SZ) and major depression disorder. Besides, depressive symptoms are frequent clinical features of SZ.
**Objectives:**
- Describe fecal SCFA concentrations in SZ patients.
- Analyze differences in SCFA depending on:
- Depression.
- Clinical severity, antipsychotics and antidepressants, comorbidities (pro-inflammatory state/obesity/metabolic syndrome [MetS]), lifestyle.

**Methods:** Cross-sectional study of 67 outpatients [mean age=43.52 ±12.42, range=22-67; males=40 (59.7%)] with diagnosis (DSM-5) of SZ recruited from their mental health clinics in Oviedo (Spain).
- Assessment:
- Fecal SCFA (gas chromatography;µg/mL).
- Plasmatic C-reactive protein (CPR;mg/dL).
- PANSS, Calgary Depression (CDS), International Physical Activity (IPAQ), Mediterranean Diet Adherence (MEDAS).
- Toxic habits (alcohol use/smoking/cannabis).
- Chlorpromazine equivalent doses (CPZ-ED), use of antidepressants.
- MetS (ATP-III), body mass index (BMI; kg/cm2).
- Statistics: Spearman correlation, U Mann-Whitney, ANCOVA.

**Results:** 14 patients showed clinical depression (CDS≥5). There were no differences in age or sex between groups. 36 patients (53.7%) showed systemic low-grade inflammation (CPR≥0.3mg/dL) and 32 (30.8%) MetS.Table 1 shows fecal SCFA levels by depressive state. Means (SD) are ahown.

**Table 1**

| | CDS≤4 | CDS≥5 | Total | U Mann-Whitney (p-value) |
|---|---|---|---|---|
| Acetate | 21.449 (12.823) | 12.911 (7.189) | 19.665 (12.328) | 221.000 (0.021) |
| Propanoate | 9.170 (6.819) | 6.848 (6.036) | 8.685 (6.687) | 268.500 (0.114) |
| Butyrate | 8.529 (6.436) | 7.875 (8.232) | 8.392 (6.787) | 320.000 (0.432) |
| Total SCFA | 39.148 (23.770) | 31.415 (24.526) | 36.742 (23.549) | 250.000 (0.062) |