of clinical ratings (Positive and Negative Symptoms Scale (PANSS), cognitive function (Montreal Cognitive Assessment (MOCA)) and Corneal confocal microscopy (CCM), vibration perception threshold (VPT) and sudomotor function testing.

Healthy controls underwent the same assessments apart from PANSS.

Results: 55 subjects without (n=38) and with schizophrenia (n=17) with comparable mean age (35.7±8.5 vs 35.6±12.2, P=0.96) were studied. Patients with schizophrenia had significantly higher body weight (93.9±23.5 vs 77.1±10.1, P=0.02) and lower Low Density Lipoproteins (2.6±1.0 vs 3.4±0.7, P=0.02) compared with healthy controls.

The proportion of gender, systolic and diastolic blood pressure, HbA1c, cholesterol, triglyceride and High Density Lipoproteins were comparable between the two groups. Patients with schizophrenia had significantly lower corneal nerve fibre density (CNFD, fibers/mm2) (35.6±6.5 vs 33.5±7.8, p<0.0001), branch density (CNBD, branches/mm2) (98.1±30.6 vs 34.4±26.9, p<0.0001), and fibre length (CNFL, mm/mm2) (24.2±3.9 vs 14.3±4.7, p<0.0001) compared with healthy controls but no difference in peripheral neuropathy assessed by VPT and sudomotor function testing.

The area under the Receiver Operating Characteristic Curve (95% CI) of CNFD, CNBD, CNFL to distinguish patients with schizophrenia from healthy controls were 87.0% (76.8–98.2%), 93.2% (84.2–102.3%), 93.2% (84.4–102.1%), respectively.

Discussion: These preliminary results:

1. support the hypothesis that corneal nerve abnormalities occur in schizophrenia;
2. corneal confocal microscopy has high diagnostic capability to distinguish subjects with schizophrenia from healthy controls;
3. provide evidence to support the potential application of corneal confocal microscopy as a non-invasive technique to detect neural change in schizophrenia.

T14. HYPOthalamic-Pituitary-GONadal AXIS Hormones in AntiPsychotic NAıve FIRST-EPISODE of PSYCHOSIS and HEALTHY CONTROLS

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Background: Kraepelin (1909) wrote about the association between female sex hormones and psychotic symptoms. He observed that women diagnosed with schizophrenia showed signs of gonadal dysfunction and hypoestrogenism. Antipsychotic drugs had not yet been introduced, so it cannot be interpreted as side effects. At the beginning of the 20th-century the second important peak of onset in women.

In spite of all these observations, few systematic investigations have been published about the effects of estrogens in women with schizophrenia. This study aims to investigate differences in the levels of sexual hormones between antipsychotic-naive women with and without psychosis.

Methods: We performed a retrospective case-control study to compare the levels of sex hormones in blood of first-episode psychosis (FEP) and healthy control women (HC) of reproductive age, as a part of a NIH-NINDS project on the study of hormonal factors and metabolism in psychosis. All participants were antipsychotic-naive, in order to avoid bias from antipsychotic medication use. Four cases and four controls were recruited: cases were women newly diagnosed with primary non- affective psychosis at the emergency department of our hospital, and controls were mental health workers of similar age with no history of psychosis. Blood samples were obtained at the luteal phase of the menstrual cycle. We registered the following variables: age, psychosis status, last menstrual day and hormone blood levels of follicle-stimulating hormone (FSH), luteinizing hormone (LH), estradiol and progesterone. We used descriptive statistics for age and hormone blood levels (mean and standard deviation -SD-) and we performed the Kruskal-Wallis test to determine any statistical differences of these variables regarding psychosis status.

All participants provided informed consent. Ethical approval was obtained from the institutional ethics review board.

Results: The mean age of FEP was 31.4 years (SD 1.9) and 26.1 years (SD 3.5) for HC, with no statistically significant differences. Both FSH and LH were higher in FEP (FSH: mean 7 U/L, SD 1.7; LH: mean 8.4 U/L, SD 2.6) compared to HC (FSH: mean 3.5 U/L, SD 1.2; LH: mean 5.7 U/L, SD 3.3), reaching statistical significance in the case of FSH (p=0.015). E-estradiol was lower in FEP (mean 75.3 pg/mL, SD 54.6) than in HC (mean 151 ng/mL, SD 102.1), although differences were not statistically significant.

Discussion: We observed higher levels of FSH in women with psychosis compared to controls in the luteal phase. These women were antipsychotic-naive; thus, these results are not a consequence of medication use. Our observations add evidence to the known relationship between altered hormonal levels and schizophrenia in women. The increase in FSH stimulates the production of estrogens, which are known to be low in psychosis compared to healthy controls. This finding supports the hypoestrogenism hypothesis of schizophrenia.

Future studies with larger samples evaluating hormonal levels, psychotic symptoms and differences with hormonal treatments could lead to research of new adjunctive therapies or approaches.

T15. MISMATCH NEGATIVITY INDICES AS A PROGNOSTIC FACTOR FOR REMISSION IN SCHIZOPHRENIA

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Background: Mismatch negativity (MMN) is an event-related potential component when a sequence of relatively standard stimuli is interrupted by the infrequent presentation of deviant stimuli. MMN is known to be associated with neuro-cognition and functional outcomes. Also, abnormally decreased MMN has often been reported in schizophrenia. Remission and recovery rates are related to the neuro-cognition of patients with schizophrenia. The present study explored the relationship of MMN with remission in patients with schizophrenia.

Methods: Forty patients with schizophrenia were recruited and divided into two groups, with or without remission, according to the Remission
T16. SCHIZOPHRENIA SPECTRUM DISORDER: DEPRESSION TRAJECTORIES AND IMMUNE MARKERS

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Background: Genetic findings imply a role of the immune system in the complex psychopathology of schizophrenia, and elevated serum levels of pro-inflammatory cytokines have been found in patients. Altered levels of cytokines are linked to severe depression and cognitive dysfunction, both of which are common among patients suffering from schizophrenia. Depression is important to diagnose in this patient population as consequences of untreated depression can be severe. In this study we will investigate if the level and change of immune markers in blood are related to depression in patients with schizophrenia spectrum disorders.

Methods: The study is part of the Bergen-Stavanger-Innsbruck-Trondheim study (BestIntro) which is a multicenter randomized controlled trial comparing treatment with amisulpride, aripiprazole and olanzapine. The present study found that MMN was significantly correlated with variables related to remission such as PANSS and GAF evaluated at 6 months later. MMN indexes appear to be a promising candidate for predicted factor of remission of schizophrenia.

T17. GLUTAMATE IN DORSOLATERAL PREFRONTAL CORTEX IN PATIENTS WITH SCHIZOPHRENIA: A META-ANALYSIS OF 1-HMRS STUDIES

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Background: Glutamate especially in frontal cortical areas was proposed to be altered in patients with schizophrenia. In the dorsolateral prefrontal cortex (DLPFC), glutamate levels might serve as functional markers of schizophrenia since this region is involved in working memory function which is impaired in schizophrenia patients. To date, there is no systematic overview on glutamate in dorsolateral prefrontal cortex at high-field intensities. We here meta-analyze magnetic resonance spectroscopy (1-HMRS) studies comprising measurement in dorsolateral prefrontal cortex (DLPFC).

Methods: Preregistration of the study was performed on September 20th 2019 (osf.io/5uyr6). Predefined literature search on pubmed comprised articles with search terms: (Magnetic Resonance Spectroscopy OR MRS) AND (Glutamate OR Glut* OR GLX) AND (schizophrenia OR psychosis OR schizophren*). We screened for case-control studies comprising glutamate levels as measured by 1-HMRS in DLPFC. Meta-analysis with a fixed and random effects model with inverse variance method, DerSimonian-Laird estimator for tau² and Cohen’s d were estimated.

Results: 329 studies were initially screened. 13 Studies were included into quantitative analysis comprising n=436 patients and n=365 controls. The random effects model revealed no difference between patients and controls (d=0.033 [-0.19; 0.26], z=0.29, p=0.77). The test for heterogeneity shows a moderate amount of heterogeneity (tau²=0.096, I²=57.4%). Subsequent sensitivity analysis reveals significant between group effect for medication status (Q=7.94, p=0.0473) i.e. an increased glutamate level in antipsychotic naïve patients (d=0.46 [0.08; 0.84], z=2.37, p=0.018).

Discussion: We conclude that care has to be taken when evaluating metabolite levels in such a heterogeneous group and interpret that increase cortical glutamate in antipsychotic naïve patients with schizophrenia might be due to possible allostatic mechanisms.

T18. EFFECTS OF COGNITIVE REMEDIATION ON WHITE MATTER IN INDIVIDUALS AT ULTRA-HIGH RISK FOR PSYCHOSIS – A RANDOMIZED, CONTROLLED CLINICAL TRIAL

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Background: Genetic findings imply a role of the immune system in the complex psychopathology of schizophrenia, and elevated serum levels of pro-inflammatory cytokines have been found in patients. Altered levels of cytokines are linked to severe depression and cognitive dysfunction, both of which are common among patients suffering from schizophrenia. Depression is important to diagnose in this patient population as consequences of untreated depression can be severe. In this study we will identify the factors that significantly predicted symptom improvement and remission including MMN at frontal site assessed at baseline, and anticipated clinical variables as predictive factors.

Results: MMN amplitudes in frontal sites were further decreased in the groups without remission compared to the groups with remission. MMN amplitude was significantly correlated with measures of symptom change and functional outcomes in patients with schizophrenia. Regression analysis revealed that symptom severity and MMN significantly predicted remission in patients with schizophrenia. Symptom improvement significantly predicted PANSS at baseline, illness duration, and antipsychotic dose, as did MMN amplitude at frontal site.

Discussion: This study explored the relationship of MMN with remission in patients with schizophrenia. The remitted patients with schizophrenia showed larger MMN amplitude in frontal electrode site than those of non-remitted patients. MMN in frontal sites was correlated with symptom improvement and functional outcomes through PANSS and GAF scales. The present study found that MMN was significantly correlated with variables related to remission such as PANSS and GAF evaluated at 6 months later. MMN indexes appear to be a promising candidate for predicted factor of remission of schizophrenia.

Discussion: Different courses of change in depression were identified suggesting that trajectories exist. With regard to temporal patterns of inflammatory parameters, findings point in the opposite direction of the established links between pro-inflammatory cytokines and depression. Further studies should explore if cytokine alterations in schizophrenia per se can explain this difference, or if depression in schizophrenia differs in its underlying biology from regular depressive states.