EPP0765

Clinical predictors of kynurenine pathway aberrations in schizophrenia and bipolar disorder

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Introduction: Schizophrenia and bipolar disorder are severe mental illnesses that are known to have a considerable overlap in underlying pathophysiological mechanisms. More specifically, disturbances in the kynurenine pathway have been hypothesized as processes bridging altered immune responses and clinical manifestations of these illnesses.
Objectives: The aim of this study was to investigate the abnormalities in serum kynurenine metabolites in schizophrenic and bipolar patients and the impact of clinical factors.
Methods: Four patient groups were included in the current study: 1) Acute bipolar inpatients (n=205); 2) stable bipolar outpatients (n=116); 3) acute schizophrenia inpatients (n=111) and 4) stable schizophrenia outpatients (n=75); and one healthy control group (n=185). Clinical symptoms were established using symptom severity scales. The quantitative determination of serum kynurenine metabolites was performed using LC-MS/MS. General linear model and multivariate linear regression analyses were used to perform the statistical analysis with JMP Pro 15.
Results: In line with previous research, the results indicate that serum kynurenine metabolites are disturbed in schizophrenic and bipolar patients compared to healthy controls. Whereas no differences were observed between schizophrenia and bipolar disorder, illness state and duration of illness clearly impacted kynurenine metabolite levels. Acutely ill patients had significantly lower levels compared to stable patients, which seemed to be driven by psychotic symptoms.
Conclusions: To conclude, the results confirm the involvement of the kynurenine pathway in the pathophysiology of schizophrenia and bipolar disorder by lowered peripheral kynurenine metabolite level. In addition, an important role of acute psychotic symptoms and longer illness duration on these metabolite aberrances is demonstrated.

Disclosure: No significant relationships.
Keywords: kynurenine; schizophrénia; BIPOLAR; inflammation

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The role of inflammation and cortisol in the relationship between social cognition abilities and later emotional or behavioural problems: evidence from a UK birth cohort

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Introduction: Deficits in social cognition have been associated with the onset of emotional and behavioural problems, but the biological mechanisms underlying this relationship remain unclear.
Objectives: This study examined whether diurnal cortisol patterns, systemic inflammation, or both, explained the association between social cognition difficulties and subsequent emotional and behavioural symptoms.
Methods: The sample consisted of 714 individuals from the Avon Longitudinal Study of Parents and Children (ALSPAC) with valid data on cortisol measures (age 15 years) and emotional or behavioural problems (age 17 years). Social cognition abilities were measured at 8, 11, and 14 years old. Inflammation was measured using serum levels of interleukin 6 (IL-6, age 9 years) and C-reactive protein (CRP, age 9 and 16 years). Bayesian structural equation modelling was used to investigate the mediating effect of cortisol or inflammation on the association between social cognitive difficulties and emotional or behavioural problems.
Results: Children with social cognition difficulties were associated with later emotional and behavioural problems. Flattened diurnal cortisol slope was associated with the hyperactivity/inattention problem two years later. Mediation analyses revealed that lower morning cortisol significantly mediated the associations between social communication difficulties at 8 years with hyperactivity/inattention and conduct problems in adolescence, with the adjustment of inflammation and all covariates. Systemic inflammation was not related to social cognitive difficulties or future emotional and behavioural problems.
Conclusions: The finding suggests that social cognition is related to cortisol activities longitudinally. It also expands the evidence that adolescents with behavioural problems are characterised by hypoactivity of the hypothalamic-pituitary-adrenal (HPA) axis.

Disclosure: No significant relationships.
Keywords: social cognition; general population; Cortisol; prospective cohort study

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Investigation of anti-NMDA receptor antibodies in first episode psychosis patients

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Introduction: Anti-N-methyl-D-aspartate receptor (anti-NMDAR) encephalitis is an autoimmune limbic encephalitis, where psychiatric symptoms are often the initial presentation dominant initially. These patients are mainly admitted to psychiatric wards, due to first episode psychosis (FEP).
Objectives: Multiple studies analysed whether anti-NMDAR antibodies were present in the sera of schizophrenic patients, but results have not verified this hypothesis. It is possible, however, that unknown autoimmune antibodies play a role in FEP, similarly to anti-NMDAR antibodies.

Methods: 40 patients with FEP and 30 healthy controls have been recruited to the study. Patients with affective psychosis, drug-related psychosis and patients with diagnosed encephalitis were excluded. The sera were tested with immune fluorescent assays for anti-NMDAR antibodies. A non-specific method was used to test anti-brain antibody activity on monkey-cerebellum and rat-hippocampus slices.
Results: Neither the samples from the 40 patients, nor the samples of healthy controls contained anti-NMDAR antibodies. 14 of the patients' and only 6 of the healthy controls' serum showed positive reaction of the neuroendothelium. These results suggest that there is a difference between the groups, although the results are not significant.
Conclusions: None of the 40 patients proved positive for anti-NMDAR antibodies in agreement with previous studies. However, a higher proportion of samples from the FEP group showed activity in the neuroendothelium of non-specific immune fluorescent assays compared to healthy controls. Based on literature and on our experience, it is possible, that unknown autoimmune antibodies play role in FEP.

Disclosure: No significant relationships.
Keywords: anti-NMDA receptor encephalitis; antibody; autoimmune encephalitis; First Episode Psychosis

EPP0766

Altered Complement System Activity in Schizophrenia: Overexpression of C4 and/or Abnormal Expression of Complement Control Proteins in the DLPFC, Parietal Cortex, Temporal Cortex, Associative Striatum, Hippocampus, Cerebellum and Whole Blood

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Introduction: In schizophrenia, abnormal synaptic pruning during adolescence may be due to an altered Complement system activity. While this hypothesis is supported by *C4* overexpression in various brain regions of individuals with schizophrenia, such alterations should be replicated and extended to other brain regions relevant to schizophrenia. Moreover, transcriptional studies of genes coding for proteins regulating the Complement system activity are lacking. Furthermore, it remains unknown whether cerebral and peripheral expression of *C4* and Complement control proteins (CCP) are related.
Objectives: To identify altered expression of *C4* and CCP (*CSMD1*, *CSMD2*, *CD46*) coding genes at the cerebral and peripheral levels in schizophrenic individuals.
Methods: We explored *C4* and CCP coding genes expression at the cerebral and peripheral levels. Using *shiny*GEO application we analyzed gene expression from eight Gene Expression Omnibus datasets obtained from 196 schizophrenic individuals and 182 control subjects. First, we compared gene expression between schizophrenic patients and controls in postmortem cerebral samples from 7 different brain regions. Then, we compared gene expression between schizophrenic patients and controls in 4 peripheral tissues.
Results: We observed *C4* overexpression in the DLPFC, parietal, temporal cortex and associative striatum of schizophrenic individuals. We report altered transcriptional patterns of CCP genes in the DLPFC, hippocampus and cerebellum of schizophrenic individuals. *CD46* expression was altered in opposite directions between brain and blood of schizophrenic individuals. No significant alteration of *C4* expression was observed in peripheral tissues.
Conclusions: Our results support the hypothesis of an altered Complement system activity in various brain regions of schizophrenic individuals which may disrupt the synaptic pruning process during adolescence.

Disclosure: No significant relationships.
Keywords: Complement system; schizophrénia; Brain; Gene expression

EPP0767

Dynamics of immune markers in different variants of post-psychotic depression after first-episode psychosis in young adult age.

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Introduction: Research in recent decades focuses on understanding the role of the immune system in First-Episode Psychosis (FEP) at a young age. Our studies indicate that different stages of schizophrenia differ in the spectrum of inflammation markers. These indicators reflect the activity of the pathological process, using them as markers of the clinical state of patients at different stages of the disease.
Objectives: To assess the relationship of immune markers with the clinical features of remission in patients after FEP.
Methods: Fifty patients aged 15-25 years with post-psychotic depression (PD) after FEP (F20, F25) and 30 healthy men were included in the study. The follow-up period was two years. PD typological variants with positive affectivity (PA) (n=30) and negative affectivity (NA) (n=20) were distinguished. Leukocyte elastase (LE), a1-proteinase inhibitor (a1-PI) activity, and S-100B autoantibodies in plasma samples were measured.
Results: The increase of LE and a1-PI activity in plasma of both types of PD patients compared to controls was detected ($p<0.01$). There was the highest LE activity and S-100B autoantibodies in PD with NA ($p<0.05$). The different dynamics of immune markers in both groups were correlated to the clinical features of remission. PD with PA was associated with a decrease in inflammatory markers ($p<0.05$) and a favorable prognosis. PD patients with NA had a further increase in LE activity and S-100B autoantibodies ($p<0.01$), and an unfavorable prognosis.