

**P.1.027 Do antipsychotic drugs influence IL-4 and IL-6 serum levels in patients with schizophrenia?**

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Concept of schizophrenia still remains controversial, in diversity of possible causes, clinical symptoms, severity of illness and treatment response. Immune etiology of schizophrenia has been postulated in many theories [1] and it seems that cytokines play an important role in microglial activation, neuroplasticity and apoptosis [2]. Several studies have demonstrated that in complex interactions antipsychotic drugs can modulate an inflammatory response and maybe have neuroprotective effects [3].

Purpose of our study was to determine possible differences in serum concentrations of cytokines in patient with first episode psychosis, schizophrenia in relapse and healthy controls, at the baseline and after antipsychotic therapy. Also, we try to establish possible correlations between changes of cytokine levels and severity of psychopathology.

This study protocol was conducted at Psychiatric Clinic, Clinical Centre Kragujevac, Serbia and Special Hospital for Psychiatric Diseases "Dr Laza Lazarevic", Belgrade, from May 2010 till March 2011. Research project was approved by two Ethics committees of these psychiatric institutions and all subjects signed informed consent to participate in the study.

We examined serum concentrations of patients with acute psychotic reaction, previously unmedicated (n=88) or patients with acute exacerbation of schizophrenia (n=45), and healthy controls (n=36). Diagnoses were established using International Classification of Disorder, 10<sup>th</sup> Revision. All patients received conventional antipsychotic therapy for a month: first generation antipsychotic, second generation of antipsychotic or combination of both. Psychiatric and immunological evaluations were done at the baseline and after one month of treatment. The psychopathological status of psychotic patients was assessed by trained physicians using Positive and Negative Syndrome Scale (PANSS). Serum concentrations of cytokines were measured using commercial ELISA tests. Statistical analysis was performed using SPSS Advanced

Statistical 13.0 software (SPSS Inc, Chicago, Illinois, USA).

Demographical and clinical characteristics of groups were similar. Preliminary results of the study showed that there are no differences in levels of IL-6 in groups of psychotic patients, comparing with healthy controls. Levels of IL-4 in serum of patients with schizophrenia in relapse were statistically significantly higher than controls ( $p < 0.0005$ ) and patient with first episode psychosis ( $p = 0.003$ ). Serum levels of IL-4 and IL-6 were significantly decreased after treatment in patients with first episode psychosis ( $p = 0.004$ ;  $p = 0.001$ , respectively). Patients with schizophrenia in relapse exhibit decreased serum levels of IL-4 and IL-6 after therapy ( $p = 0.006$ ;  $p = 0.007$ ). Changes of total PANSS scores and subscores did not correlate with changes of cytokine concentrations. Neither changes in PANSS scores nor changes in cytokine levels were different among treatment groups (typical, atypical or combination of antipsychotics).

Heterogeneity of available literature data must be considered in context of different methodology and variety of schizophrenia syndrome itself. These results can be useful in better understanding of schizophrenia, finding biomarkers to predict relapse or anticipate the course of illness and in reaching for new therapeutic strategies.

## Reference(s)

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