PLASMA β - ENDORPHIN CONCENTRATION AND SCHIZOPHRENIA ACUTE TREATMENT OUTCOME

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OBJECTIVES

Some studies indicated the presence of possible excess of opioid in schizophrenia and its relationship with negative symptoms. Neurons containing endorphins modulate dopaminergic neuronal activity which suggests that pathogenesis of schizophrenia may be associated with an imbalance in the modulatory effect of opioids on the dopaminergic system. The specific role of endogenous opioids in ethiopathology of schizophrenia is still unclear.

BACKGROUND AND AIMS

The study assessed the relationship of BE concentration and schizophrenia treatment outcome.

MATERIALS AND METHODS

The study samples comprised 49 patients hospitalized because of severe symptoms of schizophrenia and 47 healthy controls. Psychopathological symptoms were evaluated using PANSS at the onset of hospitalization, after 4, 6 and 10 weeks of treatment. B-endorphin (BE) plasma concentrations were assessed in all participants; in patients at inclusion to the study (BE1) and after 6 weeks of treatment (BE2). Patients were classified into negative (NEG) and mixed (M) psychopathological subtypes using the PANSS composite index (CI) obtained by subtracting the PANSS negative symptoms subscale score from the positive subscale score. The difference score (ranges from -42 to +42) reflecting the degree of predominance of one positive or negative syndrome in relation to the other.

RESULTS

BE concentration among all participants with schizophrenia was significantly higher than in controls at inclusion to the study ($p=0.008$) and increased after 6-week treatment (BE1 mean 0.52 ng/ml vs BE2 mean 0.59 ng/ml; $p=0.002$). Patients with NEG subtype achieved higher reduction in general psychopathology scale than M subtype (69.5% vs 32.44%). BE tended to be higher in patients with lower percent amelioration in negative symptoms. Composite index increased significantly during treatment in NEG group (mean -11.36 vs mean -8.73; $p=0.000$) however, after 10 weeks of hospitalization patients achieved similar value like at onset of treatment (mean = -11.36 vs mean = -12.36; $p=0.268$) despite general reduction of psychopathological symptoms severity. Higher BE2 concentration correlated with predominance of negative symptoms after 10 weeks treatment in both patients samples (NEG: $r = -0.557$, $p=0.071$; M: $r = -0.585$, $p = 0.0013$).

Figure 1. Blood concentration of BE1 in study groups

Figure 2. Blood concentration of BE2 in study groups

Figure 3. The relationship between Composite Index value and BE2 blood concentration in NEG group

CONCLUSIONS

BE is involved in ethiopathology of schizophrenia. It might determine specific pattern of psychopathological manifestation and might be related with persistence of negative symptoms of schizophrenia even after effective pharmacological treatment.

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