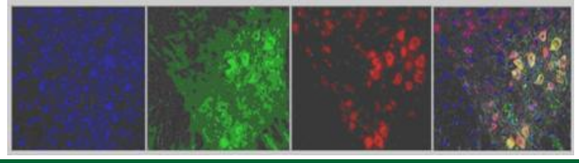

Lower BDNF levels in schizophrenia than in control population.
A case-control study.

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Purpose:

One priority on research in schizophrenia is the study of biomarkers that may help us to understand better the neurobiology, prognosis and outcome of this disorder [1]. In this direction, brain derived neurotrophic factor (BDNF) could play an important role in schizophrenia's etiopathogenesis, development and could be considered a state and trait marker of the disease. Most authors have found decreased BDNF levels in patients with chronic schizophrenia and antipsychotic treatment [2],but also BDNF level have been found decreased in drug naïve patients with a first psychotic (FEP) [3]. Also, fewer authors have found BDNF level unchanged in chronic schizophrenia or even increased. Theses changes in BDNF level could be in relation with antipsychotic drugs, psychopathologic state, evolution and subtype of the disease. Chen Da et al [4] found a correlation between BDNF level and PANSS scale score, relating positive symptoms with higher BDNF level and possibly with better prognosis. Biological parameters like oestrogens, prolactin, cortisol and DHA (dihidroepiandiostendione) also have been linked with BDNF level.

Hypothesis:

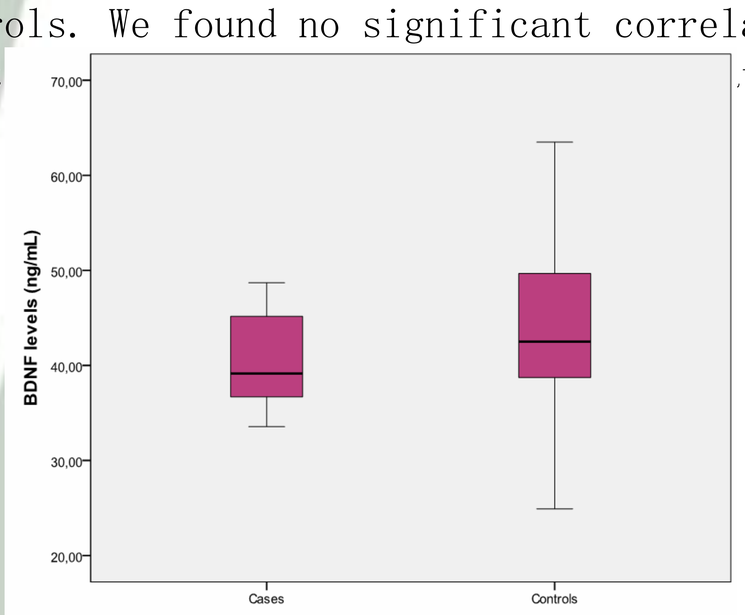
- Serum BDNF level is decreased in schizophrenia patients in relation to healthy controls.
- Serum BDNF level is positive correlated with better overall in schizophrenia.

Methods:

This is a case-control study with a sample of 20 outpatients with chronic paranoid schizophrenia with an evolution of less than 10 years (with usual antipsychotic treatment, stabilized and without acute symptoms of schizophrenia at the moment of the inclusion to the study) and 20 gender and age-matched healthy controls. BDNF levels in serum have been determined though ELISA method, as well as other analytic parameters including oestrogens, prolactin, cortisol and DHA. For the analysis of clinical state of the patients, it has been used the PANSS and PSP scales (Adapted from PSP Disabling Rating Scale and Staging System, Golbe et al, Medical Advisory Board, Society for PSP) for assessing psychotic symptomatology of schizophrenia (general, positive and negative symptoms) and overall functionality of the patient. PACS Statistics 18.0 has been used for the statistical analysis.

Results:

17 patients and 20 controls have been included in the analysis. BDNF serum levels in schizophrenia outpatients were lower that in controls, but without statistical significance (42.22 versus 44.63 pg/mL, p=0.39). Lower BNDF levels were detected in women with schizophrenia respect controls, but without statistical significance (44.58 versus 40.12 pg/mL, p=0.2). Higher oestrogens, cortisol, prolactin and DHA levels were detected in cases than controls. We found no significant correlations between BDNF levels and positive or negative PANSS subscale nor wit tion b els almost significant was



		N	Mean	Std Deviation
BDNF (ng/ml)	Controls	20	44,6275	9,36139
	Cases	17	42,2247	6,97583

BDNF levels in female gender

		N	Mean	Std Deviation
BDNF (ng/ml)	Controls	7	44,5786	6,71016
	Cases	6	40,1173	4,75560

BDNF level in male gender

		N	Mean	Std Deviation
BDNF (ng/ml)	Controls	13	44,6538	10,78152
	Cases	11	43,3742	7,90148

Conclusion:

Lower BDNF levels were found in patients compared with controls, but without statistical signification. Difference of BDNF level was higher in female gender that in male. A positive correlation almost significant between total PANSS punctuation scale and BDNF levels was found, but not with PSP scale. BDNF could have a key neuroprotective role in the development and evolution of the disorder. The results of our study are similar with the results published by other groups [3], but the small sample included could influence that these aren't statistically significant. To know better the implication of this neurotrofine in schizophrenia could allow establish casual relations between BDNF level and evolution, prognosis and predictors of response to treatment in this disease. To dispose of a biomarker disease could make easier the diagnostic and early treatment of schizophrenia. A larger sample might help to confirm that this trend is replicated and significant.

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