INVESTIGATION OF IMMUNOLOGICAL PARAMETERS IN THE FIRST EPISODE PSYCHOSIS PATIENTS

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INTRODUCTION

The spectrum of schizophrenia and other psychotic diseases have attracted the attention of humanity throughout history, and the causes and consequences have been investigated. Recently, serious infection and autoimmune diseases have been found to increase the risk of schizophrenia (1,2,3).

Severe infections, starting from the prenatal period up to adulthood, have been found to play a role in the etiology of schizophrenia (1,3,4). Previously sensitized brain tissue begins to be damaged as a result of low grade inflammation starting with stimulation of immune system elements in the central nervous system. This results in neuronal destruction and clinical symptoms.

OBJECTIVE

This study was planned to investigate immunological baseline of first-episode psychosis patients, to determine the association with the symptome content and prognostic predictive screening.

METHODS and MATERIALS

Patient group was consisted of twenty nine untreated patients with short-term psychotic disorder or schizophreniform disorder according to DSM-IV. Healthy group was consisted of twenty five volunteer healthy people. Structured Clinical Interview for DSM-IV /Clinical Version (SCID-I/CV), Positive and Negative Syndrome Scale (PANSS), Brief Psychiatric Rating Scale were applied by the clinician. After assesment, patients' blood was taken to investigate their immunological parameters before treatment.

STATISTICAL EVALUATION

The Kolmogorov-Smirnov test was used to check whether the numerical variables were within normal distribution. Normal distribution with mean and standard deviation; those with no normal distribution are defined by their median value. Student t test for those with normal distribution to determine whether there is a difference between groups when comparing quantitative data; Mann Whitney U test was used for those who did not show normal distribution. X^2 and Fisher Exact test were used to determine gender differences with categorical data. Spearman correlation analysis was used for the non-normal distribution and the Pearson correlation test was used for normal distribution.

RESULTS

The mean age was 34.+2±7,74 years for the patients and 32±7.2 for the healthy controls. The majority (%86,2) of the patients were female. No statistical difference was found between patients and healthy controls in terms of sociodemographic characteristics except income levels (p=0.02) . The mean of disease duration was 6,44 ± 4,75 month. Mean total PANSS score was 97,2 ± 11,15, Mean PANSS Positive Subscale was 29,32 ± 5,25. Mean PANSS Negative Subscale was 25,13 ± 6,31. Mean BPRS score was 49,75 ± 13,11. According to independent t and Mann-Whitney U tests, no statistically difference between patient and healthy group in terms of White Blood Cell, Neutrophil, Lymphocyte, Romatoid Factor, C3, Zinc and Copper levels. The markers that has statistically difference is shown in tables.

RESULTS

	Group	N	Mean	p
sCRP	Patient	29	0,42	0,00 **
	Healthy	25	0,29	
SAA	Patient	29	7,51	0,00 **
	Healthy	25	5,10	
Ferritin	Patient	29	36,33	0,00 *
	Healthy	25	17,26	
IgM	Patient	29	35,86	0,00 *
	Healthy	25	17,8	
IgE	Patient	29	23,52	0,05 *
	Healthy	25	32,12	
IgA	Patient	29	262,62	0,001 **
	Healthy	25	183,56	
C4	Patient	29	39,47	0,00 *
	Healthy	25	13,62	
VitE	Patient	29	9,48	0,03 **
	Healthy	25	10,72	
VitA	Patient	29	17,21	0,00 *
	Healthy	25	39,44	
AntiT	Patient	29	133,17	0,00 **
	Healthy	25	75,64	
AntiM	Patient	29	35,4	0,00 *
	Healthy	25	18,34	

		BPRS	PANSS-P	PANSS-N	PANSS-G	PANSS-T
s-CRP²	r	-0,16	-0,21	0,61	-0,25	0,05
	p	0,40	0,27	0,00	0,20	0,75
Serum Amiloid A²	r	0,10	0,40	0,44	0,13	0,54
	p	0,55	0,03	0,02	0,50	0,00
C3²	r	-0,11	0,13	0,37	-0,15	0,16
	p	0,58	0,49	0,05	0,45	0,40
Zn¹	r	-0,61	0,03	0,37	-0,20	0,14
	p	0,00	0,89	0,05	0,29	0,48
Cu¹	r	-0,68	0,25	0,02	-0,19	0,12
	p	0,00	0,20	0,50	0,33	0,54
Vitamin A¹	r	-0,50	0,17	0,02	0,02	-0,07
	p	0,01	0,38	0,92	0,92	0,70
Vitamin E²	r	0,37	-0,21	0,05	-0,28	-0,30
	p	0,05	0,27	0,80	0,14	0,12
Anti T²	r	-0,14	0,54	0,33	0,01	0,45
	p	0,47	0,00	0,08	0,96	0,01

* Mann Whitney-U

** Independent t test

[1] Pearson Correlation Test

[2] Spearmen Correlation Test

CONCLUSIONS

We found some significant differences in immunological parameters between patients and healthy controls.

In recent years, many studies have shown that, there was a immunological reaction and increase in serum acute phase protein levels in patients with first episode psychosis (1,2).

In our study, we have found significant differences in sensitive CRP, ferritin and serum amiloid A (SAA) levels. S-CRP and SAA levels also showed correlation with clinical symptoms (1,4).

We found no significant differences in cell counts like total WBC, Neutrophil and Lymfocytes. Although, there are some studies found differences (1,4).

Markers that related with 'low grade inflamation' like C4 showed significant difference. C3 also showed correlation between some clinical features. In the literature, some studies showed relation between cognitive disfunction and complement levels (4).

Vitamin A, Vitamin E, Zinc and Copper levels has no differences, but still had some correlation BPRS scores. This relation maybe shows these markers can effect both patients and healthies' symptoms like anxiety, aversion, etc (5)

Thyroid autoantibodies also showed differences between groups and these can be related with autoimmune base of psychotic disorder.

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