

Serum Lipid Profile in patients of Acute & Transient Psychotic Disorders

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Forty subjects, aged 15-45 years were randomly selected. Subjects were separated age wise into 1st group(15-30 years) and 2nd group(31-45 years). They were divided into groups A & C. Group A included twenty patients of acute & transient psychiatric disorder while group C includes 20 age & sex matched normal controls. Serum total cholesterol (TC), Serum triglyceride (TG), Serum HDL-c & Serum phospholipid were done by using colorimetric methods. Serum LDL-c was calculated by Friedwald equation. Results obtained were analyzed by using students 't' test & level of significance was done. Altered lipid metabolism was found in patients of acute & transient psychotic disorders with decreased Serum TC, LDL-c and phospholipids.

Key Words: Lipid Profile, acute psychotic disorders

Acute & transient psychotic disorders are group of schizophrenia that have the potential to become schizophrenic according to ICD-10 classification. It varies between 15-45 years, male and females are equally affected^{1,2,4}. Incidence is between 0.1 and 0.5 per 1000 population³. Lipids are organic substances occurring in plant and animal tissues⁵. Cholesterol is especially abundant in the nervous system where it is important for many aspects of cellular structure and functions⁶. Cholesterol affects both the fluidity of cell membrane, membrane permeability and exchange processes. Changes in Serum levels may affect neurotransmission in the central nervous system. Early investigators found decreased Serum cholesterol level in patients with acute psychotic disorders; these studies were summarized by Boston et al 1996⁷. Horrobin 1996⁸, called schizophrenia a membrane lipid disorder expressed through out the body. There is now substantial evidence for two abnormalities in phospholipids metabolism in acute psychotic disorders⁽⁹⁾. One is an increased rate of breakdown of phospholipids and the other is a reduced rate of incorporation of highly unsaturated fatty acid into phospholipids^{10,11}. Other Investigators found lower red cell membrane fatty acids in schizophrenic as compared to normal controls^{12, 13, 14}. It is

also postulated that supplementation with poly unsaturated fatty acids may help to relieve symptoms in schizophrenic patients¹⁵. Hence a study was planned to evaluate serum lipid profile in patients with acute and transient psychotic disorders without antipsychotic therapy.

Materials and methods

Forty subjects, aged 15-45 years were randomly selected. Subjects were separated age wise into 1st group (15-30 years) and 2nd group(31-45 years). They were divided into groups A and C. Group A included twenty patients of acute & transient psychotic disorder while group C included twenty age, sex and socioeconomically matched normal controls.

Five milliliters of 12 hours fasting samples were drawn which was specifically analyzed for serum total cholesterol, serum triglycerides, serum high density lipoprotein Cholesterol and serum phospholipids by using enzymatic colorimetric methods. Serum low density lipoprotein cholesterol was calculated by Friedwald equation. The results and data obtained were subjected to statistical analysis by using students 't' test and level of significance was done.

Results

The results and level of significance of these groups is given in Table I & II.

Table I Comparison of serum lipid profile between A & C groups in first age group (15-30 years).

Groups	Total Cholesterol	Triglycerides	HDL-C	LDL-C	Phospholipids
A	134.8±30.62	84.9±38.4	25±4.44	92.3±26.46	193.62±27.76
C	181.5±32.40	110.5±40.16	26±5.83	133.33±34.15	239.5±55.47
Statistical Analysis					
A Vs C	S	NS	NS	HS	S

Table II. Comparison of serum lipid profile between A & C groups in 2nd age group (31-45 years).

Groups	Total cholesterol	Triglyceride	HDL-C	LDL-C	Phospholipid
A	142.5±38.97	93.5±40.25	32.75±25.5	91.0±37.9	222.75±68.39
C	178.43±26.41	139.57±73.01	30.64±6.16	123.36±27.29	226.36±53.31
Statistical Analysis:					
A Vs C	S	Ns	Ns	Ns	Ns

KEY:

A= Acute and transient psychotic patients without treatment. B1= Schizophrenics on typical medication, C= Normal controls.

Discussion

Serum cholesterol levels were found significantly decreased in acute and transient psychotic patients more in younger age group as compared with normal controls. Our study is consistent with the study mentioned by Boston et al 1996⁷, who also observed significantly low levels of cholesterol in these patients. No significant difference was observed in serum triglyceride level. Serum phospholipid concentration was significantly decreased in patients of acute and transient psychotic disorder of young age group. The decrease in serum phospholipid in acute psychotic disorder may be due to altered phospholipid metabolism. Our study is consistent with the study of Horrobin & Bennett 1999¹⁸, who also observed decreased phospholipids in these patients. The decrease in serum lipid subfractions may be due to genetic, environmental or neurodevelopmental abnormalities. Gene diet interaction early in the neurodevelopment may uncover genetically determined abnormalities in lipid metabolism of casual importance in the later onset of Schizophrenia²¹. Neurodevelopmental studies underline the importance of an adequate dietary contents of essential fatty acids for the integrity of brain structure¹⁹. The decreased lipid concentration may be responsible for altered neurotransmission at the pre or post synaptic level that is why most of the neuroleptic medications are either antiserotonergic or antagonist at the dopamine receptive level^{7, 15}.

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