



A CORRELATION OF NUTRITIONAL PARAMETERS IN PATIENTS WITH DEPRESSIVE DISORDERS

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ABSTRACT

This study is designed to find out association of nutritional parameters in patients with depressive disorder and Find out correlation of various components of nutrition with depression score. Whether, biochemical parameters which define nutrition status of patients make difference between the patients with depression and normal subjects. In this descriptive-analytic study, all patients referred to psychiatric clinic for outpatient management, were studied. Fifty patients with depressive disorders were included. We selected fifty healthy controls without being any medical or psychiatric diagnosis. All patients and control subjects gave informed consent to participate in the study. The Beck Depression Inventory (BDI) was filled for them to assess the severity of their depression. The blood samples were drawn after a 12-hour fasting for detecting Blood Glucose, lipid profile, Serum total protein, albumin, Iron, Calcium and Magnesium. Total cholesterol, triglyceride and High density lipoprotein cholesterol levels are significantly lower in patients with depressive disorder than the other groups. Iron, Calcium levels were significantly lower in patients with depressive disorder while Magnesium levels were significantly high than the control groups. These findings may be helpful in management of depression and better outcome. Although these results do not suggest that nutritional parameter can be used as biological markers to distinguish depressive disorders, larger samples are required to prove such results in the future.

KEY WORDS: depressive disorders, lipid profile, iron, calcium, magnesium.

INTRODUCTION

Nutritional neuroscience is an emerging field of science shedding light on the fact that nutritional factors are knotted with human cognition, behavior, and emotions. The most common mental disorders that are currently prevalent in numerous countries are depression, bipolar disorder, schizophrenia, and obsessive-compulsive disorder (OCD)^[1]. The pattern of dietary intake in general population often deficient in many nutrients, especially vitamins, minerals, and essential fatty acids^[2]. nutritional supplement/treatment is an emerging effective therapeutic intervention which may be appropriate for controlling and to some extent in reducing patients' symptoms. This nutritional supplement/therapy often useful in preventing depression, eating disorders and anxiety disorders^[3]. Psychiatrists, psychologist should familiarize themselves about alternative or complementary nutritional therapies to triumph over patient noncompliance. Although further research needs to be carried out to determine the recommended doses of most nutritional supplements and it should be based on previous and current efficacious studies^[4].

MATERIAL & METHODS

This was a cross sectional, observational, descriptive-analytic study. The study was conducted in a Tertiary Care Teaching Hospital of Rajasthan, India. Duration of

study was 12 months, starts from may 2013 to may 2014. Sample size of the study was 100, fifty patients with depressive disorders were included and fifty healthy controls without being any medical or psychiatric diagnosis.

Exclusion Criteria

1. Patients of age less than eighteen years.
2. All those who denied participation in the study.

Procedure

1. Approval from Institutional Ethics Committee was taken before starting the study.
2. Patients attending the out-patient department of hospital were randomly contacted personally.
3. The study was explained to them in brief in a language they can understand. Consent of participants was taken in written informed consent form.
4. All data collected were analyzed using appropriate statistical tests.

RESULT

Total cholesterol, triglyceride and high-density lipoprotein cholesterol levels are significantly low in patients with depressive disorder than control group. Iron, Calcium levels were significantly lower, while magnesium levels are significantly higher in patients with depressive disorder than the control groups (table 1).

TABLE 1. Association of nutritional parameter with normal and depressive patients

Parameter	Case (mean) n =50	Controls (mean) n =50	P- value
Total cholesterol	175.18±12.8	203.12±16.2	<0.001
Triglyceride	82.4±10.7	132.1±2.4	<0.001
LDL	112.5 ± 13.8	117.3 ± 14.2	0.090
HDL	33.13 ± 2.5	47.1 ± 2.4	<0.001
Blood glucose	99 ± 8.9	101 ±10.1	0.293
Total protein	6.1 ±2.4	6.8 ±2.3	0.140
Albumin	3.6 ±1.2	3.8 ±1.3	0.426
Iron	59 ±12.3	76±18.1	< 0.001
Calcium	8.5 ±0.9	9.4 ±0.7	< 0.001
Magnesium	2.7 ±0.5	2.1± 0.4	< 0.001

DISCUSSION

Nutritional deficiency, irregular food habits, lack of balanced diet, deficiency of minerals has been attributed to an important role in development of vast range of psychiatric behavior. Bio active peptide and amine are important in neuro transmitter in various neuronal pathways. Various minerals and enzymes are important in neuronal metabolism. Phospholipids are important in myelin sheath formation, activity of neuronal membrane. Steegmans et al^[4] cholesterol depletion correlates with decrease in serotonergic neural activity in CNS. Few studies suggest low cholesterol level, for prevention of myocardial infarction is associated with increased mortality from suicide, accidents and violence^[5]. In our study we found that patients with depressive disorder had significantly lower serum cholesterol, triglyceride and HDL levels compare to normal control subjects. Our results are similar with Hamidreza Roohafa^[6] study, where they found significantly lower mean cholesterol in MDD patients compare to control subjects. The results of Mehmet Yucel Agargun^[7] were similar to our study, where serum cholesterol and TG levels are significantly lower in patients of co morbid panic disorder and MDP. We found that HDL cholesterol was significantly low and this finding is consistent with Myriam Horsten et al^[8], where HDL shows negative association with depressive symptoms^[8]. The finding are consistent with the study Kaplan, Bonnie J et al where minerals like calcium and iron having important role in mood disorders^[9]. Results related with higher Magnesium levels in development of depressive disorder are similar with the results of yuzo imida, shin-ichi yishioka et al.^[10]. Though our study has no significant co relation between serum total protein and serum albumin, but According to Maes M., Neels H., Major depressed subjects showed significantly lower TSP and Alb concentrations^[11].

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