

## CLINICAL INVESTIGATION OF SERUM TRACE ELEMENTS, ANTIOXIDANTS AND IMMUNOGLOBULINS IN GENERALIZED ANXIETY DISORDER PATIENTS IN BANGLADESH

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The purpose of the study was to determine the serum concentration of trace elements, antioxidants and immunoglobulins in generalized anxiety disorder (GAD) patients and compare those values of healthy volunteers matched by age, sex and socio-economic conditions. 50 GAD patients and 51 healthy volunteers were recruited. Socio-economic data revealed that most of the patients are middle aged and literate. Patients were recruited from Bangabandhu Sheikh Mujib Medical University by random sampling diagnosed by trained psychiatrist. 4 ml of venous blood was aspirated from the subjects and controls. Serum trace elements (Zn, Cu, Mn, Fe, Ca, Mg) were determined by flame atomic absorption spectroscopy. Serum retinol and  $\alpha$ -tocopherol were determined using RP-HPLC method, whereas serum vitamin-C was estimated by UV spectrophotometry. Immunoglobulins were determined by turbidimetric method using immunoglobulin kit. Data were analyzed by independent t-test using SPSS. The concentration of Zn decreased significantly ( $p < 0.05$ ), whereas concentration of Cu, Mn and Fe increased significantly ( $p < 0.05$ ) in GAD patients. Serum  $\alpha$ -tocopherol decreased significantly ( $p < 0.05$ ) and ascorbic acid increased significantly ( $p < 0.05$ ) and serum retinol decreased non-significantly ( $p > 0.05$ ). There was significant ( $p < 0.05$ ) increase in serum IgM level, but the increase in serum IgA and IgG level were non-significant ( $p > 0.05$ ). From the study it is found that serum concentrations of Cu, Fe, Mn, ascorbic acid and IgM were increased significantly and those of Zn and  $\alpha$ -tocopherol decreased significantly in compare to control. Moreover this study may provide prognostic tool for the diagnosis and treatment of this disease.