

COMPARISON OF HEAMATOLOGICAL PARAMETERS AND SERUM ENZYMES IN β -THALASSEMIA MAJOR PATIENTS AND HEALTHY CONTROLS

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ABSTRACT

The aim of the present cross-sectional study was to assess specific hematological parameters and serum enzymes in a group of people diagnosed with Thalassemia and compared with similar parameters from healthy controls. Blood samples were collected from randomly selected seventy β - thalassemia patients, representing most regions of Babylon governorate. The study subjects included 31 males and 39 females with age range of (1-40 years). All patients were ethnic Arabs, blood transfusion dependent, who were diagnosed and registered at thalassemic center of Babylon pediatric hospital. Additionally, blood samples were collected from 70 healthy individuals (without hemoglobinopathy) as a control group that included 42 males and 28 females with age range of (3-40 years). Hematological parameters and serum enzymes that were assessed included: white blood cell, hemoglobin concentration, platelets, ferritin, urea, Aspartate Aminotransferase (AST) or Glutamic Oxaloacetic Transaminase (GOT) and Alanine Aminotransferase (ALT) or Glutamate Pyrovate Transaminase (GPT). The results indicated that values for Hb concentration were significantly lower in blood samples of the thalassemic patients than the controls ($P < 0.05$), while WBC, platelets, ferritin, urea, GPT and GOT were significantly increased in blood samples of thalassemic patients compared to controls ($P < 0.05$). Levels of serum superoxide dismutase activity (SOD) were significantly increased in β -thalassemia patients compared to controls (967.43 ± 115.6 U/ml vs. 170.7 ± 40.2 U/ml), while catalase (CAT) activity was significantly lower in thalassemic patients than controls (144.77 ± 17.3 U/ml vs. 194.95 ± 47.2) P -value < 0.05 . High levels of antioxidant enzyme SOD with decrease of antioxidant enzyme catalase, were associated with thalassemic patients compared to controls suggesting that assessment of hematological parameters and serum enzymes are valuable tools to predict thalassemia in Iraqi population

KEYWORDS: β - Thalassemia, Antioxidants, Serum Enzymes

Original Article

Received: Nov 10, 2015; **Accepted:** Nov 19, 2015; **Published:** Nov 23, 2015; **Paper Id.:** IJMPSDEC20154