

Correlation of Serum Ferritin and Left Ventricular Function in Beta Thalassemia Major Patients with Increased Transfusion Dependence

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Abstract : Aims: To correlate serum ferritin with left ventricular function in beta thalassemia major patients with increased transfusion dependence and to find out whether echocardiography can be used to assess pre clinical cardiac disease in these patients. Methods: The cross sectional study was conducted at Department of Pathology, Shaheed Zulfiqar Ali Bhutto Medical University, Pakistan Institute of Medical Sciences, Islamabad. 60 patients of beta thalassemia major with increased transfusion dependence were enrolled in this study. Serum ferritin levels of all patients were measured by using indirect enzyme linked immunosorbent assay (ELISA). Echocardiography was performed on all patients by a consultant cardiologist by linking conventional echocardiography with tissue Doppler imaging. Ejection fraction and E/A ratio were measured in all patients to assess left ventricular systolic and diastolic function. Results: On the basis of serum ferritin level, patients were divided into three groups. Group I consisted of patients having serum ferritin level equal to or less than 2500 ng/ml. A total of 25 patients were placed in this group. Group II included patients having serum ferritin level between 2500 to 5000 ng/ml. A total of 22 patients were placed in this group. Group III included patients having serum ferritin level more than 5000 ng/ml. This group consisted of 13 patients. All patients having serum ferritin below 2500ng/ml had normal systolic function, and only 16% of the patients in this group had diastolic dysfunction as reflected by abnormal E/A ratio. In group II, 27% of the patients had systolic dysfunction reflected by subnormal ejection fraction while 40% of the patients had diastolic dysfunction. In group III, 62% of the patients had abnormal systolic and diastolic function. Pearson correlation was used to find a correlation between serum ferritin and left ventricular function. A strong negative correlation was found which is reflected by a p value of less than 0.05 which is significant. Chi square test is used to correlate serum ferritin with E/A ratio. P value came out to be less than 0.05 which is significant.

Keywords : beta thalassemia major, left ventricular function, serum ferritin, transfusion dependence

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