ABSTRACT

The aim of this study was to assess the levels of serum 1,25 dihydroxycholecalciferol and its relation to bone mineral density and heart disease in beta thalessmia patients.

**METHODS:**eighty patients with B-thalassemia major with a mean age 16 years (range 10 – 22years), underwent full history taking, clinical examination and laboratory tests including complete blood count ,calcium ,phosphorus, alkaline phosphatase, Serum ferritin and serum 1,25 dihydroxycholecalciferol.

Complete M-mode and pulsed Doppler echocardiography were performed for cases to study diastolic and systolic functions and measurements were obtained. Myocardial Performance Index (MPI) was calculated for both the left and right ventricles ,and data was interpreted.

Bone mineral density (BMD) (g/cm 2) was measured at lumbar spine (L1–L4),radial and femoral area using dual-energy x-ray absorptiometry (LUNAR, DPXMD#7164).T scores and Z scores will be used.

**RESULTS:**Among our cases sixteen patients (20%) had low serum 1,25 dihydroxycholecalciferol level, 4 (5%) had an increased level while the remaining 60 patients(75%) had normal levels**,** Those who are below 18 years ,we measured their bone density by Z score ,60 patients(94%) had decreased bone density and 4 patients(6%) had normal bone mineral density while those who are above 18 years ,we measured their bone density by Tscore ,13 patients (81%) had decreased bone density ,3 patients(19%) had osteopenia, There was no statistically significant correlation between 1.25 (OH)2 Cholecalciferol and bone density, There was a statistically significant positive (direct) correlation between 1,25 (OH)2 Cholecalciferol and Calcium, There was a statistically significant negative (inverse) correlation between 1,25 (OH)2 Cholecalciferol and Phosphorus;and alkaline phosphatase.There was no statistically significant correlation between 1.25 (OH)2 Cholecalciferol and cardiac dysfunction.

**CONCLUSION:** There is no association between 1,25 dihydroxy cholecalciferol and myocardial dysfunction .And also there is no association between 1,25 dihydroxy cholecalciferol and bone mineral density in pediatric patients with beta-thalassemia major

**KEY WORDS:** Thalassemia major, 1,25 dihydroxy cholecalciferol,Systolic and diastolic cardiac functions,bone mineral density,DEXA