Bone Mineral Density in Beta Thalassemia Syndrome in Mosul City

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Abstract

Background: During the last decade, the presence of osteopenia and osteoporosis in well-treated thalassemics has been described in different studies with high prevalence up to 50%.

Aim: To assess bone mineral density in β-thalassemia major patients and its relation with sex, age, hemoglobin, calcium, ferritin, body mass index, chelation therapy, and splenectomy.

Materials and Methods: From September 2010 to December 2010, case series study of 52 patients with beta thalassemia major was carried out. All were retrieved from Thalassemia Center in Ibn-Alatheer Teaching Hospital (32 males and 20 females) with age between 3-30 years. They were scanned for bone mineral density at lumbar spine with dual-energy X-ray absorptiometry scan at the same hospital. Information about chelation therapy and splenectomy were obtained with measurement of height and weight. Blood samples for hemoglobin, calcium, and ferritin were taken.

Results: Entire patients had T-score in osteoporotic range (100%). But for Z-score osteoporosis was seen in 50% and osteopenia in 36.5%, and only 13.4% were normal. All patients had elevated ferritin level, 69.2% had low body mass index and 61.5% had low hemoglobin levels. On the other hand 50% had low calcium levels and only 3.8% were not using chelation therapy. Just less than one third (30.7%) had delayed puberty and the rest (69.2%) were in prepubertal stage. Lastly 23% had splenectomy.

Conclusions: There is high frequency of low BMD in beta thalassemia major patients, elevated ferritin level, low Hb level, and delayed sexual maturity.

Key Words: beta thalassemia major, ferritin level, Hb level