

## **THE PATTERN OF BONE DISEASE AND ITS MORBIDITY AMONG THALASSEMIA TREATED AT A SINGLE INSTITUTE IN SAUDI ARABIA**

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*Background.* Bone disease is an increasingly recognized serious cause of morbidity on young adult of both thalassemia major (TM) and thalassemia intermedia (TI). It's etiology is multifactorial, culminating with increased bone resorption and remodeling, due to the complication of the disease itself and other risk factors; low baseline hemoglobin, delayed puberty, hormonal failure, high iron stones and nutritional deficiency. The lack of early diagnosis and treatment can led to multiple problems, growth failure, osteoporosis, fractures, spinal deformities and nerve compression.

*Aims.* To assess the prevalence of bone disease and its morbidity among thalassemia patients treated at our institute.

*Methods.* Hundred-fourteen thalassemia patients were enrolled in the study, (104 TM and 10 TI), patients age range from 1-40 years old (59 females & 55 males) 67% were children and adolescent. These patients were treated at King Abdulaziz University Hospital (KAUH), Jeddah, Kingdom of Saudi Arabia. All patients were assessed clinically. Blood and urine samples were obtained for the determination of biochemical and hormonal profiles, included, PTH, 25 OH vitamin D3. Bone maturation was assessed by radiological bone age. Bone marrow density (BMD) by DEXA was determined on half of the patients. Bone formation markers (bone-specific alkaline phosphatase and osteocalcin) and bone resorption markers (Pyridinoline and deoxy pyridinoline) were analysed for patients whom had BMD and referred for treatment.

*Results.* Indicate a high prevalence of hypovitaminosis D, 50% in thalassemic children, 80% among adolescents, up to 70% of adolescent and young adults had dysfunction in hypogonadotropic hypogonadism. 60% had reduced low bone mass (LBM) among adolescents, worsen by increase in age. High prevalence of LBM among thalassemia intermedia.

*Summary.* Bone assessment was found to be suboptimal in children and adolescents, bone morbidity increased with age. All thalassemia should be screened annually for bone disease. Prevention of osteoporosis is the most important priority in managing thalassemia patients by early diagnosis and treatment

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