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Vincenzo De Sanctis, Ashraf T. Soliman, Heba Elsefdy, Nada Soliman, Elsaid Bedair, Bernadette Fiscina, Christos Kattamis

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Bone disease in β thalassemia patients: past, present and future perspectives

Vincenzo De Sanctis[a*], Ashraf T Soliman[b], Heba Elsefdy[c], Nada Soliman[d], Elsaid Bedair[e], Bernadette Fiscina [f], Christos Kattamis[g]

[a] Pediatric and Adolescent Outpatient Clinic, Quisisana Hospital, Ferrara, Italy

[b] Department of Pediatrics, Division of Endocrinology, Hamad General Hospital, Doha, Qatar and Department of Pediatrics, Division of Endocrinology, Alexandria University Children's Hospital, Alexandria, Egypt

[c] Department of Pediatrics, Ain Shams University, Cairo, Egypt

[d] Primary Health Care, Ministry of Health, Alexandria, Egypt

[e] Department of Radiology, AlKhor Hospital, Hamad Medical Center, Doha, Qatar

[f] Department of Pediatrics, NYU School of Medicine, New York, USA

[g] First Department of Paediatrics, University of Athens, Athens, Greece

Abstract

Bone disorders in patients with thalassemia major (TM) and intermedia (TI) constitute complex conditions that result from various factors affecting the growing skeleton. Although much progress has been made in our understanding of the natural history, pathogenesis and clinical manifestations of β- and δβ-thalassemia, bone manifestations remain a puzzle for the clinician. In this review, we outline the key points in the current literature on the pathogenesis and management of bone disease in patients with TM and TI who were conventionally treated in recent decades with frequent blood transfusions and iron chelation. Prevention, early recognition and treatment are the most effective strategies for the management of bone disease in these patients. However, further studies are required to maintain optimal bone health for both TM and TI patients. Studying bone disease in patients with non-transfusion dependent TI, which seems to worsen considerably with age, is important to delineate the effect of the disease itself on bone health without the intervening factors of transfusions, iron intoxication and chelation.

Keywords:

β-thalassemia major
Bone marrow expansion
Iron overload
Bone disorders
Osteopenia/osteoporosis
Treatment