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Long-Term Cohort of Patients with Beta Thalassemia; Prevailing Role of Serum Ferritin Levels in Hypocalcemia and Growth Retardation

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Abstract : Background: Beta-thalassemia Major (BTM) is a kind of hereditary hemolytic anemia which depended on regular monthly blood transfusion. However, iron deposition into the organs leads to multi-organ damage. The present study is the first study which aimed to evaluate the average of five-years serum ferritin level and compared by the prevalence of short stature and hypocalcemia. Materials/Methods: A cross-sectional retrospective study which a total of 140 patients with beta-thalassemia who were referred to Qom Thalassemia Clinic between February 2011 and July 2016 were enrolled to be reviewed. The exclusion criteria were consisting of incomplete medical records, diagnosis less than 2-years-ago and the blood transfusion less than every 4 weeks. The data including age, gender, weight, height, age of initial blood transfusion, age of initial chelation therapy, ferritin, and calcium were collected and analysis by SPSS version 24. Results: A total of 140 patients were enrolled. Of them, 75 (53.4%) were female. The mean age of the patients was 13.4±4.6 years.The mean age of initial diagnosis was 20.2±7.4 months. Hypocalcemia and short stature were occurred in 41 (29.3%) and 37 (26.4%) patients, respectively. The mean five-years serum ferritin level was significantly higher in the patients with short stature and hypocalcemia (P<0.0001). However, rise in serum ferritin level significantly increases the risk of short-stature and hypocalcemia (1.0004- and 1.0029 fold, respectively). Conclusion: We demonstrated that prevalence of short stature and hypocalcemia were significantly higher in the BTM.However, ferritin significantly increases the risk of short stature and hypocalcemia.

Keywords : beta-thalassemia, ferritin, growth retardation, hypocalcemia
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