Essential element levels in thalassemia major patients

To the editor

We read with very interest the article on evaluation of some essential element levels in thalassemia major patients in Mosul district, Iraq which was neatly written by Al-Samarrai et al.[1] I acknowledge that this study is timely and contributes valuable data. We would like to highlight and comment some points regarding the article. Thalassemia major are most common single gene disorder in the world and represents the life threatening variety of this disorder wherein the child's life depends upon receipt of regular red cell transfusions. The management of thalassemia major which includes blood transfusion and chelation therapy has dramatically extended the life expectancy of thalassemic patients who can now survive into their fourth and fifth decades of life. However, chronic iron-overload due to frequent blood transfusion is a major cause of organ failure and mortality worldwide. The study strength will be increased if thalassemic patients are categorized into different age groups chronologically, on chelation therapy or not and number of blood transfusion received. Zinc is an essential element that supports normal growth and development. In thalassemia, the expected low serum zinc level is due to hemolysis, urinary loss, and inadequate dietary intake. Zinc deficiency is considered as one of the main factors contributing to growth and puberty disorders in thalassemic patients.[2] Al-Samarrai et al[1] reported that Serum Zn level of thalassemic cases was 38.65±20.25 which was statistically significant lower than that of control namely 96.44±27.63. Whereas recent study carried out by Mehdizadeh et al,[3] concluded that mean serum zinc level was significantly higher in the thalassemic group and there was no significant correlation between serum zinc level and short stature, serum ferritin level, desferrioxamine dose, initiating time of blood transfusion, and chelation therapy. Deficiency of zinc in patients with thalassemia major is still controversial. Maclean et al[5] reported that deferiprone therapy is associated with zinc depletion in thymocytes and Al-Refaie et al[6] showed that deferiprone therapy results in low zinc levels in the blood. But, the author has not mentioned whether the thalassemic patients on chelation therapy or not. The author wrote that the mean K level in the thalassemic children was significantly higher than in the control. But in table 3 showed, thalassemic K level was 4.49±0.49 mEq/l and control K level was 4.71±0.44 mEq/L.

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No reply was received from the author.

References

1. Al-Samarrai AH, Adaay MH, Al-Tikriti KA, Al-Anzy MM. Evaluation of some essential element levels in thalassemia major patients in Mosul district, Iraq. ***Saudi Med J*** 2008; 29: 94-97.
2. Ladis V, Papatheodorou A, Berdousi H, Palamidou F, Evagelopoulou C, Athanassaki K, et al. Growth and management of short stature in thalassaemia major. ***J Pediatr Endocrinol Metab*** 1998; Suppl 3: 835-844.
3. Mehdizadeh M, Zamani G, Tabatabaee. Serum Zinc status in patients with major beta Thalassemia. ***Pediatr Hematol Oncol*** 2008; 25: 49-54.
4. Shamshirsaz A, Bekheirnia MR, Kamgar M, Pourzahedgilani N, Bouzari N, Habibzadeh M, et al. Metabolic and endocrinologic complications in beta-thalassemia major: a multicenter study in Tehran. ***BMC Endocr Disord*** 2003; 3: 4.
5. Maclean KH, Cleveland JL, Porter JB. Cellular zinc content is a major determinant of iron chelator-induced apoptosis of thymocytes. ***Blood*** 2001; 13: 3831-3839.
6. Al-Refaie FN, Wonke B, Hoffbrand AV, Wickens DG, Nortey P, Kontoghiorghes GJ. Efficacy and possible adverse effects of the oral iron chelator 1,2 dimethyl 3-hydroxypyrid- 4- one (Ll) in thalassemia major. ***Blood*** 1992; 80: 593-599.