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Original Article

Serum Folate Level Determination in Major Beta Thalassemia Patients

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Abstract:

Objective: Beta major thalassemia is a variant of beta thalassemia syndrome which could be treated with bone marrow transplantation or if not available, regular blood transfusion. In the later group, supportive therapy is the mainstay of treatment because of low folate intake or absorption, But the main cause of insufficient supportive therapy, is the increasing need of bone marrow for ineffective erythropoiesis in the absence of regular blood transfusion. The purpose of regular blood transfusion in B major thalassemia patients is to maintain the range of Hemoglobin level between 9 to 11 gr/dl and stop insufficient erythropoiesis, completely. Therefore, by regular blood transfusion, supportive therapy with folic acid would not be needed. The aim of this study is to determine serum folate level in regular transfused beta major thalassemia patients in Mofid Children Hospital during 2006.

Methods: This is a cross sectional descriptive – analytic study performed on 100 beta major thalassemia patients receiving regular blood transfusion and desferal. The transfusion is done by using of post- storage leukodepleted blood. Patients' data achieved from information data sheets on their documents. Serum folate level determined with Electrochemiluminesence method in one of the most reliable laboratory centers. Normal serum folate level was 3-17.5 ng/ml in this laboratory with the sensitivity of 0.6 ng. Data analysis performed with SPSS analysis software, and with chi squred, T-test and Spearman test.

Findings: 56 girls (56%) and 44 boys (44%) entered in this study with the median age of 156 (± 71.2) months and age range of 14-288 months. Patients' median hemoglobin level was 9.5(±0.87) g/dl, with minimum of 7.5 and maximum of 11.9 g/dl. The mean MCV was 84.2 (±4.20) fl, with the range of 73.4 -95.3 fl. Serum folate level was in the range of 1-19 ng/ml and median of 9 (± 4.9) ng/ml. Serum folate was less than 3ng/ml in 3% of evaluated patients. Hemoglobin level was equal or more than 9 g/dl in 73% of patients.

Conclusion: It seems that if major beta thalassemia patients receive regular blood transfusion, their serum folate level would be in normal range and supplementation therapy with folate is not necessary.

Keywords:

Beta major thalassemia ، Folic acid ، Hemoglobin ، Folate ، Trace elements

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