

A study of Immunoglobulins,Complements and Some Hematological Parameters Levels in Thalassemic Patients in Related Bacterial Infections

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Abstract

Background: Thalassemia and abnormal hemoglobin are the most common genetic disorders and are considered health problems in many developing countries. Beta-Thalassemia major is the most familiar type, in which the beta-globin chain synthesis is impaired.

Objective: To evaluation the concentrations of immunoglobulins IgM, IgG and IgA also the complements C3 and C4 between β -Thalassimic children patients and control group, and find the differences of some hematological parameters between the two groups, finally, isolation of some bacterial species causes the bacterial infections.

Patients and Methods: The present study was performed on 40 β -thalassemia major children who were registered in the thalassemia center at Al-Karama teaching hospital in Baghdad and 20 healthy children as a control group from the period of September 2015-August 2016, the serum immunoglobulins (IgG, IgM, IgA) and complement C3, C4 levels were measured also blood culture was done to identify the causative infection.

Results: The mean serum concentrations of IgM, IgG and IgA in β -thalassemia major children were 1834.1 ± 312.2 , 134.5 ± 40.3 and 212.7 ± 89.6 , respectively, and they were increased significantly ($p \leq 0.05$). The mean serum concentrations of C3 and C4 were consistently decreased in children and there were no significant differences ($p \leq 0.05$) between the two groups. The mean Hb of β - thalassemic children was 8.32 ± 0.91 g/dl and this lower from the level of control, RBC count is also low 3.7 ± 0.7 but the levels of WBCs was higher in β - thalassemic children 10.4 ± 1.67 , several types of bacterial specious were isolated included *Staphylococcus aureus* 30% (12 patients) , *Escherichia coli* 25%(10 patients) , *Streptococcus pneumoniae* 17.5% (7 patients), *Salmonella enteritidis* 10% (4 patients), *Serratia marcescens* 7.5% (3 patients), *Pseudomonas aeruginosa* 5%(2 patients), *Klebsiella pneumoniae* 2.5%(1 patients) and *Haemophilus influenza* 2.5%(1patients).

Conclusion: The alteration in serum immunoglobulins and complements levels in thalassemia major children probably can be due to marked heterogeneity of the patients,.

Key words: Serum immunoglobulins, thalassemia, complements, bacterial infections.

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