

Serum Ferritin Level in the Siblings of Beta Thalassemia Major Patients

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ABSTRACT

Aim: To determine serum ferritin level in siblings of beta thalassemia major patients.

Methodology: 200 subjects were selected and were divided into groups IA and IB. Group IA with normal siblings of Beta Thalassemia major patients and 1B with beta thalassemia trait (BTT) siblings of Beta thalassemia patients. Serum ferritin test is performed by taking 2ml of blood sample.

Results: Serum ferritin level is increased in BTT siblings (IB) as compared to IA and control group (II).

Key words: Ferritin, thalassemia, siblings

INTRODUCTION

Beta-thalassemia is a group of genetic blood disorder with decreased or absent beta globin chain synthesis thus causing decreased Hb in red cells, decreased red cell production and resulting anemia. Most thalassemias are inherited as recessive traits^{1,2}.

Iron deficiency anemia presents with hypochromia and microcytosis following depletion of iron stores³. The most abundant amount of iron in the body is found in haemoglobin, the remaining iron is present in the storage form as Ferritin and Haemosiderin. Serum ferritin or assessment of iron stores by Perl's stain is a reliable parameter for assessment of iron status of patients⁴.

METHODOLOGY

Two hundred subjects were selected. They were brothers and sisters of BTM patients. They were selected from thalassemia centre Sir Ganga Ram Hospital, Children Hospital, Services Hospital and institute of blood transfusion Punjab Lahore, 200 age and sex matched healthy controls, fulfilling the inclusion criteria were included in the study. Every selected subject was given a case number. After introduction with the subject and the attendants, an informed consent was taken from them. Demographic details including age and gender and a brief, relevant clinical history was recorded. The history included a complete family history of pallor requiring blood transfusions or a confirmed diagnosis of thalassemia was also recorded.

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RESULTS

The detail of results is given in table 1

Table 1: SERUM FERRITIN LEVEL IN GROUP IA, IB, II

Ferritin (ng/ml)	IA	IB	II
Mean ± SD	111.1±50.5	133.9±67.3	94.5±23.4
Ranges	32-205	28-388	44-180
Total	44	156	200

IA=Normal Siblings of BTM patients IB= BTT

Siblings of BTM patients II=Normal Controls

Statistical Analysis: IA VS IB p<0.01(HS), IA VS II p<0.05(S), IB VS II p<0.05(S),

DISCUSSION

In this study, serum ferritin was done in 156 subjects having thalassaemia trait. Mean ± SD values were 133.9±67.3 ng/ml in BTT subjects. Comparison between different groups i.e., IA, IB and II showed highly significant difference. The values of serum ferritin in thalassaemia trait by other workers are comparable with the present study. These were 156--567 ng/ml by Weyden et al (1989)⁶, 156--203 ng/ml in Asian children by Early (1990)⁷ and 118.6ng/ml by Saleem et al (1995)⁸.

Some studies show that serum ferritin levels in beta thalassaemia heterozygotes are different at different age groups and adults have high serum ferritin while in females no such variation is observed⁹. Relationship of serum ferritin to body iron stores may differ by many conditions. Vit. C deficiency may lower the plasma ferritin level. Ferritin is an "acute phase reactant protein" and may be increased in various inflammatory and malignant conditions and with chemotherapy^{5,10}.

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