Assessment Of Thyroid Dysfunction In Children With Beta – Thalassemia Major Attending Outpatient Clinic, Fayoum University Hospital

Thesis

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Summary

Beta thalassaemia represents a group of recessively inherited hemoglobin disorders characterized by deficient synthesis of the β-globin chain. The homozygous state results in severe anemia in infancy, which requires regular blood transfusion**.**

The combination of blood transfusion and chelation therapy has dramatically prolonged the life expectancy of these patients, thus transforming thalassaemia from a rapidly fatal disease of childhood to a chronic disease compatible with a prolonged life**.** On the other hand frequent blood transfusions, iron overload, poor compliance to therapy and chronicity of the disease have in turn contributed to a whole spectrum of complications including cardiac problems, hypogonadism, diabetes mellitus, hypothyroidism, hypoparathyroidism and other endocrine and metabolic problems in adolescents and young adults suffering from thalassaemia major**.**

The commonest form of thyroid dysfunction seen in thalassaemics, is subclinical hypothyroidism due to abnormalities of the thyroid gland which, leads to insufficient production of thyroid hormones. However, the frequency of hypothyroidism varies depending on the region, quality of management and treatment protocols.

The main aim of this study was to determine the frequency of hypothyroidism in the children suffering from thalassaemia major for early detection and timely treatment.

So our study was carried out from January 2014 to April 2014, in the outpatient clinic of Al Fayoum University Hospital in Al Fayoum

Governorate, Egypt. It will include 70 children with Beta –thalassemia major. Data collection was carried out using a field pre-tested interviewing questionnaire covering the following elements; age, sex, onset of disease, amount and frequency of blood transfusion, splenic status, Iron chelating agent as treatment (onset, type, dose, compliance, and complication) and manifestation of hypothyroidism. Measures for weight and height were done and analyzed according to growth curves.

Blood samples were taken for CB, serum ferritin and thyroid function tests (freeT3, free T4 and TSH). Hypothyroidism was defined as TSH level > 6.4µ IU/ml, T4 levels < 0.6 µg/dl and T3 levels < 2.4 µg/dl. The thyroid function status of the patients was classified as compensated (increased TSH, normal T4, T3) and uncompensated (increased TSH, decreased T4 and/or T3) primary hypothyroidism, and euthyroidism (normal TSH, normal free T4).

Seventy age and sex matched children without thalassemia constituted the control group

Our study showed that four (5.7%) children of the thalassemic patients (70 children) were found to have primary subclinical hypothyroidism. Also there is positive correlation between age of patients, frequency of blood transfusion and developing iron overload and consequently hypothyroidism. For subjects who use iron chelating agents. they still suffer from iron overload and under risk of developing hypothyroidism , so they need closer and more regular follow up.