EVALUATION OF THYROID FUNCTION TESTS IN CHILDREN WITH CHRONIC LIVER DIESEASES AT ALEXANDRIA UNIVERSITY CHILDREN'S HOSPITAL

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Introduction

Thyroid hormones are metabolized by the liver and their systemic endocrine effects are regulated by it. Although, liver disorders may alter thyroid hormone metabolism, the majority of hepatic patients are clinically euthyroid. Some studies showed thyroid abnormalities in acute and chronic liver diseases. Thyroid hormone levels in the blood can range from normal to substantial abnormalities either euthyroid sick syndrome, autoimmune thyroid disorders or subclinical hypothyroidism.

Aim of the work

The aim of the study is to evaluate thyroid profile in children with chronic liver disease following up at the Pediatric Liver clinic at Alexandria University Children's Hospital.

Subjects and methods

An observational cross-sectional study including patients with chronic liver disease attending the Pediatric Liver clinic at Alexandria University Children's Hospital (AUCH). The research was done from June 2021 to June 2022. One hundred and two children with chronic liver disease were enrolled in this study. Patients were assessed on emphasis of: detailed history taking, clinical examination includes anthropometric measurements; body weight, height, BMI using the Centers for Disease Control and Prevention's National Center for Health Statistics reference range (CDC). Abdominal examination for the presence of hepatomegaly, splenomegaly or ascites. Manifestations of severity assessed by modified Child-Pugh classification. Furthermore, laboratory investigations in form of liver (SGPT, SGOT, GGT, ALP, TSB, DSB, Total protein, Albumin), lipid (Triglycerides and Cholesterol) and thyroid profiles (TSH, FT4, FT3, T3, T4).

Results

One hundred and two patients were included in the study with 50 females (49.0 %) and 52 males (51.0%). The median age of the studied cases was 6 years. Regarding the age at presentation (years), median age at presentation was 1.5 years. Duration of illness (years) was (0.50 – 13.0). The mean Weight SD is -0.5 and mean height SD is -1.14. The most common presentation was abdominal distension (80.4%). On examination, 70% of the patients had hepatomegaly and 60 % had jaundice. Fifty patients (49%) had splenomegaly as shown in figure

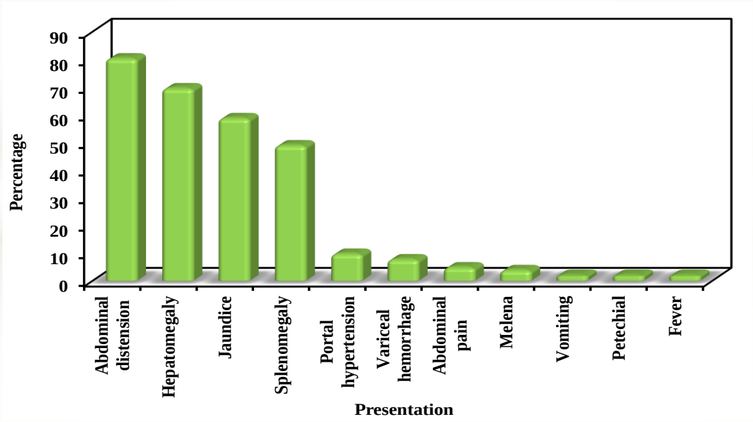

Figure (1): Distribution of the affected cases regarding presentation (n = 102)

Regarding complications, 32 (31.4%) patients had stunted growth, 22 patients (21.6%) had Portal hypertension. The most common diagnosis in the studied cases was autoimmune hepatitis (24.5%) followed by glycogen storage disease (20.6%), portal vein thrombosis (12.7%), idiopathic hepatitis (9.8%) then chronic viral hepatitis (7.8%). In the present study as regarding thyroid function results, Thyroid function tests were normal in 88 instances (86. 3%). Out of 14 aberrant outcomes, seven patients (6.9%) had euthyroid sick syndrome (ESS) and seven individuals (6.9%) had subclinical hypothyroidism (SH). (Table 1)

Table (1) :Distribution of the studied patients according to interpretation of thyroid function tests (n = 102) .

	No.	%
Interpretation		
Normal	88	86.3
Euthyroid sick syndrome	7	6.9
Subclinical hypothyroidism	7	6.9
Total	102	100

The recent study reveals a statistically significant relation between albumin level and thyroid functions. As, it is found lower in patients with subclinical hypothyroidism. Also, there is significant direct relation between melena and hepatic encephalopathy with euthyroid sick syndrome.

Conclusion

The prevalence of thyroid disease in children with chronic liver disease was 14% which signifies the importance of screening for thyroid dysfunctions. Thyroid dysfunctions in the present study in the form of euthyroid sick syndrome was detected in (6.9%) and subclinical hypothyroidism in (6.9%).