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**Original article:**

**Influence of hypothyroidism on biochemical markers of liver function test: a cross sectional study**

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**Abstract:**

**Introduction:** Normal level of thyroid hormone is important for normal hepatic function as it maintain the metabolism of bilirubin by playing a role in the enzymatic activity of glucuronyltransferase and by regulating the level of ligandin. The liver in turn glucuronidates and sulphates the thyroid hormone, excretes into bile and regulates their systemic endocrine effects. Therefore hepatic dysfunction is commonly observed in patients with thyroid disease. Aim was to determine the biochemical markers of Liver Function Test (LFT) in patients with hypothyroidism and their possible correlation with thyroid profile.

**Methods**: Thyroid profile and liver function test (LFT) were evaluated in 40 patients with subclinical hypothyroidism **(TSH 6.0-9.9mIU/L)**, 40 patients with overt hypothyroidism **(TSH ≥10.0 mIU/L)** between 20-50 years of age and were compared with 40 age matched normal euthyroid controls after applying exclusion criteria. Thyroid profile and LFT were estimated using fully autoanalyser VITROS 5600 considering p value **<0.05** as significant.

**Results and observations:** Subjects with both subclinical hypothyroidism and overt hypothyroidism had significantly raised serum AST, ALT, ALP **(P<0.0001)** and total protein levels **(P<0.01)** compared to controls. Further, TSH showed significant positive correlation with AST, ALT and ALP (P<0.05) in both subclinical and overt hypothyroidism whereas FT3 and FT4 had a significant negative correlation with AST, ALT and ALP **(P<0.05)** in overt hypothyroidism.

**Conclusion:**  It might be necessary to monitor liver enzymes frequently in hypothyroid patients as declining liver function may be missed by single assessment and deranged biochemical parameters of LFT might indicate underlying altered thyroid status.

**Key words**- LFT, FT3, FT4, TSH