

Relationship between Hypothyroidism and Non-alcoholic Fatty Liver Disease among Patients Attending the Endocrinology Clinic, Colombo South Teaching Hospital, Sri Lanka

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Hypothyroidism and Non-alcoholic fatty liver disease (NAFLD) have been identified as two major problems rising at a higher rate. Several studies have revealed the relationship between hypothyroidism and NAFLD. However, local data is scarce. The current study was focused on identifying the relationship between Hypothyroidism and NAFLD among the patients who attended the Endocrinology clinic, Colombo South Teaching Hospital, Sri Lanka. A descriptive cross-sectional study was conducted with 37 hypothyroid patients aged 18 to 60 years. Out of the 97% were females and the mean age of the participants was 37 years. An interviewer-administered questionnaire was used to obtain the socio-demographic data, family and clinical history, and BMI (Body Mass Index) of all the participants. Blood samples were collected to perform laboratory investigations; TSH, FT4, Lipid profile, AST, ALT, and GGT. NAFLD was diagnosed by performing an ultrasound scan. Data analysis was performed using SPSS version 20. About, 62% of the participants were diagnosed as having NAFLD. Age ($p < 0.05$), BMI ($P < 0.05$), Triglyceride ($p < 0.05$), VLDL ($p < 0.05$), Total cholesterol: HDL ratio ($p < 0.05$), AST ($p < 0.05$), ALT ($p < 0.05$) and GGT ($p < 0.05$) showed a significant difference between NAFLD and non-NAFLD groups, whereas TSH and FT4 levels did not show any significant difference. GGT also showed a significant difference ($p < 0.01$) between the subclinical and overt hypothyroid groups. Significant associations between age and Fatty Liver status ($p < 0.05$), BMI, and Fatty Liver status ($p < 0.01$) were also observed. No statistically proven relationship was found between Hypothyroidism and NAFLD even though a coincidence was observed in descriptive statistics.

Keywords: *non-alcoholic fatty liver disease, subclinical hypothyroidism, overt hypothyroidism*