

Non-High Density Lipoprotein -Cholesterol as Predictor Marker for Cardiovascular Risk in Hypothyroidism Patients with and without Diabetic

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ABSTRACT

Non-high-density lipoprotein cholesterol (non-HDL-C) encompasses all atherogenic lipoprotein fractions and is considered a strong indicator of cardiovascular risk. This study aimed to assess the predictive value of non-HDL-C for atherosclerotic cardiovascular disease (ASCVD) risk among hypothyroidism patients with and without diabetes mellitus. A total of 120 participants were enrolled and divided into three groups: Group 1 (G1) — 40 hypothyroid patients with diabetes, Group 2 (G2) — 40 hypothyroid patients without diabetes, and Group 3 (G3) — 40 healthy controls. Fasting serum glucose (FSG), glycosylated hemoglobin (HbA1C), lipid profile [total cholesterol (TC), triglycerides (TG), low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), and non-HDL-C calculated as (TC – HDL-C)] and thyroid function tests were determined. Non-HDL-C showed a significant positive correlation with body weight, total cholesterol, and thyroxine ($P < 0.05$) in both hypothyroid groups. Strong positive correlations were also observed between non-HDL-C and FSG, HbA1C, TG, and LDL-C ($P < 0.01$), while an inverse correlation was found with HDL-C. The findings suggest that non-HDL-C serves as a superior and reliable biomarker for evaluating cardiovascular risk in hypothyroid patients, regardless of diabetic status. Its inclusion in clinical evaluation may enhance early detection and prevention of cardiovascular complications.

Keywords: Non-HDL-C, Hypothyroidism, atherosclerotic cardiovascular disease, Diabetes Mellitus.

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