

عنوان مقاله:

Significance of Lipid Profile Parameters in Predicting Pre-Diabetes

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خلاصه مقاله:

In prediabetes, blood glucose levels are higher than normal; however, they remain below the diabetes threshold. Studies conducted on biomarkers for this disease result in controlling diabetes mellitus (DM) or reducing the risk of developing complications. Lipid profile parameters are considered important predictors of DM. Therefore, this study was conducted on three groups of normoglycemic ($n=30$), pre-diabetics ($n=125$), and diabetics ($n=30$) to recognize the predictive role of lipid parameters in the transition from pre-diabetes to diabetes. In this experiment, in addition to total cholesterol and triglycerides, very-low-density lipoprotein (VLDL), low-density lipoprotein (LDL), high-density lipoprotein (HDL), triglyceride/HDL ratio, and fasting triglyceride-fasting blood glucose (FBG) index were measured. Based on the results, medians for total cholesterol, LDL, HDL, LDL/HDL ratio, cholesterol/HDL ratio, and LDL/HDL ratio did not differ significantly across the groups of normoglycemia, prediabetes, and diabetes. For triglyceride, the medians were significantly higher in pre-diabetes and also diabetes, compared to normoglycemia (i.e., 127.9 and 129.1 vs. 94.5 mg/dL, respectively [$P<0.001$]). Moreover, the same results were observed in the case of VLDL (i.e., 25.6 and 30.9 vs. 18.9 mg/dL, respectively). The triglyceride/HDL ratio significantly increased pre-diabetics and diabetics, compared to normoglycemic (2.22 and 2.67 vs. 2.18, respectively). Moreover, the median of the triglyceride-FBG index significantly had an increase in pre-diabetics and diabetics, compared to normoglycemic (8.89 and 9.38 vs. 8.22, respectively). The importance of triglyceride, VLDL, triglyceride/HDL ratio, and triglyceride-FBG index in distinguishing between pre-diabetes and normoglycemia was verified by a receiver operating characteristic curve analysis of the results. Logistic regression analysis confirmed the risk effects of the four parameters on pre-diabetes and diabetes. Therefore, triglyceride, VLDL, triglyceride-FBG index, and triglyceride/HDL ratio are considered promising biomarkers used to predict pre-diabetes and DM in the general population.

کلمات کلیدی:

Pre-diabetes, diabetes, Normoglycemia, lipid profile, Triglyceride-glucose index, Triglyceride/high-density lipoprotein ratio

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