



Applicant Information

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Abstract Details

Title:

Utility of white blood cell indices of inflammation as diagnostic biomarkers of dyslipidaemia in type 2 diabetes mellitus.

Category:

Health promotion with nutrition and hygiene

Authors:

Agbenatoe Frederick, Agbezuge Dominic, Lokpo Sylvester Yao.

Objectives:

To assess the predictive ability of white blood cell (WBC) indices of inflammation in the diagnosis of dyslipidaemia among patients with type 2 diabetes mellitus (T2DM) in the Ho municipality.

Method:

A cross-sectional study was conducted among 192 patients with T2DM who were conveniently recruited from the Diabetic Clinic of the Ho Municipal Hospital. A semi-structured questionnaire was administered to collect socio-demographic, lifestyle and clinical data from 2018-2020. Anthropometry and blood pressures were measured using standard methods. Fasting blood samples were obtained for full blood count (FBC), glucose and lipid assays. Cell line ratios reflecting subclinical and systemic inflammation were calculated. Dyslipidaemia was evaluated using the National Cholesterol Education Program-Adult Treatment Panel (NCEP-ATP) III criteria. The diagnostic value of WBC indices in predicting dyslipidaemia was assessed based on logistic regression and area the under the reacting operating characteristic (AUROC) curve analyses.

Results:

The overall prevalence of dyslipidaemia was 167(86.5%; 95% CI: 81.0-90.6). A unit change in total WBC count was associated with 2.073 odds of developing dyslipidaemia (aOR: 2.073; 95% CI: 1.037-4.144; p=0.039) after adjustment for confounders. Total WBC counts significantly discriminated between respondents with dyslipidaemia and those without dyslipidaemia (AUROC: 0.64; 95% CI: 0.57-0.7; p=0.0195).

Conclusion:

The prevalence of dyslipidaemia is high among patients with T2DM in the Ho municipality. Total WBC appears to be an important clinical tool for the diagnosis of dyslipidaemia in our study cohort. Hence, the findings underscore its utility as a biomarker for early detection and management of dyslipidaemia among study respondents.

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