The Number of Metabolic Syndrome's Components Associated with Fibrinogenemia in Patients with Type 2 Diabetes

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Submission date: 18-Feb-2021 04:28AM (UTC+0800)
Submission ID: 1511741745
File name: C-32.pdf (209.22K)
Word count: 732
Character count: 3921

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THE NUMBER OF METABOLIC SYNDROME'S COMPONENTS ASSOCIATED WITH FIBRINOGENEMIA IN PATIENTS WITH TYPE 2 DIABETES

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Background: Metabolic syndrome (MetS) is a cluster of cardiovascular disease risk factors that the prevalence increased in developing country. Several studies have demonstrated that this syndrome atrongly predicts cardiovascular disease. Recently, close association of MetS with haemostatic abnormalities including plasma fibrinogen has been reported. Plasma fibrinogen is a marker of inflammation and it is considered to be one of the predictors of coronary artery disease. The aim of this study was to determine the prevalence of MetS in and to analyze the association between the number of MetS components with fibrinogenemia in patients with type 2 diabetes.

Method: We analyzed 100 patients with type 2 diabetes consisting of 60 male and 40 female patients using cross sectional observational design. Blood pressure, body weight, height and waist circumference (WC) were measured. We also obtained fasting plasma glucose (FPG), HbA1c, total cholesterol (TC), low density lipoprotein cholesterol (LDL-C), high density lipoprotein cholesterol (HDL-C), triglyceride (TG) and fibrinogen level from blood venous samples. MetS was defined according National Cholesterol Education Program Adult Treatment Panel (NCEP ATP) III definition when 3 of 5 components were present, the diagnosis MetS could be established. The components were abdominal obesity (men >90 cm, women >80 cm), blood pressure _130/_85mmHg, FPG _100 mg/dL, TG _150 mg/dL and HDL-C (men <40 mg/dL; women <50 mg/dL). Based on fibrinogen levels, patient was defined hyperfibrinogenemia if the fibrinogen level >400 mg/dL. Data was statistically analyzed using logistic regression test.

Result: There were 75 patients had at least 3 components of MetS that the prevalence of MetS in this study based on NCEP ATP III definition was 75%. The mean of WC in these

100 patients was 99.21±10.28 cm, FPG was 181.31±79.60 mg/dL, HbA1c was 8.67±2.32%, TC was 199.02±50.62 mg/dL, LDL-C was 123.83±41.16 mg/dL, HDL-C was 44.93±10.69 mg/dL and TG was 196.53±18.30 mg/dL. The overall mean of fibrinogen level was 381.08±123.07 mg/dl, while 69% patients were normofibrinogenemia and 31% were hyperfibrinogenemia. There was only one patient (1%) patient had one MetS component with fibrinogen level 241 mg/dL, 24 patients (24%) had two MetS components with the average fibrinogen level was 345.62±105.22 mg/dL, 44 patients (44%) had three MetS components with the average fibrinogen level was 359.32±92.47 mg/dL, 26 patients (26%) had four MetS components with the average fibrinogen level was 423.00±123.92 mg/dL and 5 patients (5%) had five MetS components with the average fibrinogen level was 380.45±224.54 mg/dL. There was significant association between the number of MetS components and fibrinogen level (p 0.023; $p < 0.05$).

Conclusion: Prevalence of MetS in this studywas 75% based on NCEP ATP III definition and there was significant association between the number of MetS components and fibrinogenemia in patients with type 2 diabetes

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