The correlation between fibrinogen level and arterial stiffness in type 2 DM patients

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Background: Cardiovascular disease (CVD) is increased in type 2 Diabetes Mellitus (T2DM) patients due to a complex combination of various traditional and non-traditional risk factors that have important roles in the evolution of atherosclerosis. Fibrinogen level has been described as independent risk factor for CVD. Many studies have indicated that arterial stiffness also plays a critical role in the pathogenesis of atherosclerosis and CVD. Brachial-ankle pulse wave velocity (baPWV) is a method to measure arterial stiffness. It reflects the stiffness of both the aorta and peripheral arteries in an arm and a leg.

Objective: The aim of this study is to analyze the correlation between fibrinogen level and baPWV in T2DM patients.

Material and Methods: This cross sectional study was conducted at diabetes outpatient clinic Dr. Soetomo teaching hospital Surabaya Indonesia. Inclusion citerias were patiens with T2DM aged over 45 years old and signed informed consent. Patients with severe infection, renal and liver dysfunction, pregnancy, fibrate treatment were excluded in this study. We interviewed and measured body weight and height, BMI, blood pressure and baPWV. Plasma glucose (FPG) and post prandial glucose (PPG), HbA1c, lipid profiles, and fibrinogen level were measured as well. Data was statistically analyzed using Pearson correlation test.

Results: We analyzed 40 patients who have been diagnosed with T2DM consisting of 17 males and 23 females. The overall mean of BMI was 25.66 + 2.91 kg/m2 , HbA1c was 8.01 + 1.39%, FPG was 150.2 + 61.97 mg/dL, PPG was 214 + 74.49 mg/dL and fibrinogen 456.75 + 142.60 mg/dL. One-sample Kolmogorov-smirnov test indicated that the data distribution was normal. There was significant correlation between fibrinogen level and baPWV (r 0.336; $p < 0.05$).

Conclusion: There was significant correlation between fibrino gen level and arterial stiffness in T2DM patients.

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