COAGULATION PROFILE AMONG PATIENTS WITH TYPE II DIABETES ATTENDING THE DIABETES CLINIC AT MBARARA REGIONAL REFERRAL HOSPITAL, SOUTH WESTERN UGANDA

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ABSTRACT

Background: Type 2 diabetes mellitus is a metabolic disorder characterised by hyperglycaemia and insulin resistance. It disturbs the physiological balance of coagulation and fibrinolysis, leading to a prothrombotic state and/or bleeding tendency. Hyperglycaemia and insulin resistance cause qualitative and quantitative changes in coagulation and fibrinolytic processes thereby producing atherothrombotic events.

Objective: The objective of this study was to determine the coagulation profile, glycaemic control and the association between glycaemic control and coagulation status among patients with Type 2 Diabetes Mellitus attending the diabetes clinic of Mbarara Regional Referral Hospital.

Methods: A cross-sectional study was conducted among 147 participants at the diabetes clinic between November to December 2022. Four millilitres of whole blood samples were collected from T2DM participants meeting the inclusion criteria after consenting and filling questionnaires. EDTA blood samples were analysed for platelets count and HBA1C using Mindray hematology analyser and FineCare machines respectively. Blood samples collected in citrate tubes were used for determining PT, aPTT, Fibrinogen and D-dimer levels as coagulation parameters using HumaClot Junior. Data collected were entered and analysed using Stata version 19. A p-value of ≤ 0.05 was considered significant and the odds ratio with its 95% interval were used to determine the strength of association between the outcome and independent variable.

Results: The prevalence of coagulopathy was 46%. 75 (51%) of the study participants had abnormal PT, 72 (49%) had abnormal aPTT, 88 (59.9%) had abnormal fibrinogen concentration, 30 (20.4%) had abnormal D-dimer concentration and 27 (18.4%) had abnormal platelets count. 81.6% participants had a poor glycaemic control. Factors that were statistically significant were poor glycemic control (cOR = 0.23; 95% CI: 0.09-0.59, P=0.004), being female (cOR = 0.31; 95% CI: 0.14–0.65, P=0.006), BMI/overweight (cOR = 0.48; 95% CI: 0.25–0.95, P=0.02) and age above 60 years (cOR = 4.06; 95% CI: 1.2-9.21, P=0.034) which has also showed an association with coagulopathy.

Conclusion: Patients with T2DM had abnormalities in coagulation causing hypercoagulation and/or bleeding tendency as evidenced by findings from this study. Patients with poor glycaemic control are at high risk of developing coagulopathies leading to atherothrombotic and haemorrhagic events.

Keywords: type 2 diabetes mellitus, coagulopathy and glycaemic control.