

TITLE OF STUDY- MEAN PLATELET VOLUME- CORRELATION WITH HbA1C AND ITS ASSOCIATION WITH MICROVASCULAR COMPLICATIONS IN TYPE II DIABETES MELLITUS

CONTEXT: Diabetes mellitus (DM) is a global pandemic. Increased platelet activation has been suggested to be involved in the pathogenesis of vascular complications. It is being found that MPV values are high in patients with diabetes mellitus, more so in uncontrolled diabetes. Platelet volume, a marker of the platelet function and activation, is proposed as to be involved as a causative agent with respect to altered platelet morphology and function. The higher the MPV, the larger and younger the platelets are and more is the risk for thrombosis and are associated with increased risk for hyperglycemic complications. Mean platelet volume (MPV), an important, simple, effortless, and cost-effective tool and thus has potential to be used as indicator of presence of vascular complications.

AIMS: 1, To compare MPV in type 2 Diabetes Mellitus patients with good glycemic control with that of poor glycemic control. 2, To investigate the association between MPV and microvascular complications of diabetes. (retinopathy and nephropathy).3, To assess the correlation between MPV, sex, duration of diabetes, hypertension and hyperlipidemia.

METHODOLOGY: Mean Platelet Volume, HbA1C, FBS, PPBS, Hb, triglyceride (TG) and serum creatinine levels were measured from venous samples of 100 diabetic patients. BMI, SBP, DBP was also measured. Diabetic Nephropathy was assessed using spot urine albumin creatinine ratio. Diabetic Retinopathy was assessed by ophthalmoscopic examination. Continuous variables were analysed with the Unpaired t test/single factor ANOVA and categorical variables were analysed with chi squared test/ Fisher Exact Test.

RESULTS: Mean platelet volume is higher in diabetics with poor glycemic control (10.01-12.00 fL) than those with good glycemic control (≤ 8.00 fL). It is still higher in those with diabetic complications (10.01-12.00 fL). MPV shows a strong correlation with FBS, PPBS, HbA1c, presence of hypertension and duration of diabetes.

CONCLUSIONS: our results showed significantly higher MPV in poorly controlled diabetics, and still higher in those with microalbuminuria and retinopathy. Hence, MPV can be used as indicator of presence of vascular complications.