

Title: Assessment of Von Willebrand factor and its correlation with Cardiovascular risk factors in patients with and without Type 2 Diabetes

Category: Prevention

Abstract

Objective: Brachial-ankle pulse wave velocity (baPWV) is a method to estimate arterial stiffness, which reflects the stiffness of both the aorta and peripheral artery. Traditional risk factors like dyslipidemia, altered BMI and hypertensive are known risk enhancers for coronary artery disease. Von willebrand factor (vWF) is a large multimeric glycoprotein present in plasma and is considered as an accurate predictor of the vascular risk. We conducted a study to the role and correlation of vWF with other cardiovascular risk factors in patients with type 2 diabetes and the correlates were compared with the non-diabetic population

Methods: Forty-six patients were matched as 1:1 studied in two groups of 23 patients each group of diabetics (DG) and another as non-diabetic patients (NDG). vWF,baPWV along with other risk factors like lipid profile, albuminuria, hypertension, BMI and HbA1c were evaluated. Unpaired t-test and Mann Whitney test were utilized for the statistical analysis.

Results: The mean baPWV in the DG was higher (1434 cm/s) as compared to NDG (1315 cm/s). Similarly, mean vWF in DG (297 IU/dl) was higher than the NDG (202 IU/dl) group. A weak correlation of vWF was seen ($r=0.29$; p value 0.01) with urinary proteins in both the groups. There was no statistical correlation observed with baPWV ($p=0.94$) and other risk factors including HbA1c ($p=0.47$), BMI ($p=0.57$), cholesterol ($p=0.08$), LDL-C ($p=0.47$) studies in both DG and NDG. Our study demonstrated that vWF is a marker of endothelial dysfunction and is elevated in the patients with type 2 diabetes. There was no such remarkable correlation with baPWV and other risk enhancers. A targeted drug design and development program to decrease the elevated vWF would be useful to mitigate the enhanced CV risk and improve cardiovascular outcomes in T2DM patients

Conclusion: There striking correlation for the elevated vWF in T2DM and the absence of such direct correlation with baPWV. We postulate that the estimation of vWF in T2DM should be explored in real world setting and also the results of our study can be the basis for further large scale randomised controlled trials to further explore this evidence.