



P3 Factor Influencing Endothelial Function in Type 2 Diabetes Mellitus with Newly Diagnosed Hypertension

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ABSTRACT

Background: Increased risk for cardiovascular diseases is associated with diabetes, can be partially attributed to endothelial dysfunction. However, the cumulative factors leading to endothelial dysfunction in Type 2 DM are not clear. In the current study, a novel attempt was made to understand factors influencing endothelial function (EF) in humans using Angiotensin Converting Enzyme (ACE) inhibition as a tool to alter EF.

Methods: Brachial Flow-mediated-dilation (FMD) was measured using ultrasonography in 60 diabetics with newly-diagnosed hypertension. Serum E-selectin, Vascular-Cell-Adhesion-Molecule-1 (VCAM-1), hsCRP, IL-10, Renin, Ang 1-7, Ang II and ACE 2 were measured using ELISA. Amplitude of change, calculated as absolute difference in values obtained at baseline (V1) from those after 3 months (V3) (V3-V1), of biomarkers were correlated with change in FMD and E-selectin after 3 months of ACE inhibition.

Results: FMDV3-V1 showed significant negative correlation with hsCRPV3-V1, FSV3-V1, PPSV3-V1 and HbA1cV3-V1 [($r = -0.3, p = 0.02$), ($r = -0.31, p = 0.01$), ($r = -0.27, p = 0.03$) ($r = -0.3, p = 0.02$), respectively] and significant positive correlation with Ang1-7V3-V1 ($r = 0.39, p = 0.002$). E-selectin correlated positively with FSV3-V1, PPSV3-V1, HbA1cV3-V1, VCAM-1V3-V1 and ReninV3-V1 [($r = 0.35, p = 0.006$), ($r = 0.32, p = 0.01$), ($r = 0.45, p = 0.0005$), ($r = 0.66, p < 0.001$), ($r = 0.53, p < 0.0001$) respectively].

Conclusion: A balance between the Renin/ Ang II and Ang 1-7/ACE2 axis plays a significant role in EF. Additionally, reduction in blood sugar levels and vascular inflammation also improves EF.

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