ID 127

Cardiovascular Disease Risk Assessment in Non-Menopausal and Post-Menopausal Women with Type 2 Diabetes Mellitus Using the World Health Organization-International Society of Hypertension Risk Prediction Chart and Framingham Risk Score

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Cardiovascular diseases (CVD) are a leading cause of mortality among women with T2DM. In Sri Lanka, the performance of CVD risk assessment tools among women with T2DM in different reproductive stages is not yet studied. The main aim of this study is to compare the performance of two CVD risk assessment tools. The future risk of developing CVDs was assessed in 293 female patients with T2DM attending the clinics at Colombo South Teaching Hospital using Framingham Risk Score (FRS) and WHO/ ISH risk prediction charts. The risk assessment tools were validated by their ability to identify women with raised LDL- cholesterol levels, high diastolic blood pressure (DBP) levels, and high fasting blood glucose levels. The CVD risk was significantly high among post-menopausal women when compared to non-menopausal women ($p< 0.05$). WHO/ISH charts identified the majority of patients in the low-risk category (78.8%) while FRS categorized only 23.2% of patients in the low-risk category. The FRS identified higher proportions (48.8%) of patients in the moderate risk category. There was a significant discrepancy in the agreement between the two risk assessment tools (k value = 0.068, $p<0.05$). Approximately 80.2% of patients with raised LDL cholesterol (>100mg/dl) were categorized in the low-risk category by WHO/ISH charts but FRS classified the majority of the women with raised LDL cholesterol (86%) as moderate/high CVD risk. WHO/ISH Charts categorized 81.2% of women with high DBP (>90 mmHg) as having low cardiac risk. The sensitivity and specificity of WHO/ISH and FRS in identifying the cardiac risk based on the levels of DBP were 19%,86%, and 93%,30% respectively. FRS is having high sensitivity in recognizing women with high CVD risk requiring therapeutic intervention.

Keywords: *Cardiovascular Diseases (CVDS), Type 2 Diabetes Mellitus (T2DM), Framingham Risk Score (FRS), world health organization*