The effect of ASCVD risk score and Framingham risk score along with hs-CRP on CVD risk assessment in diabetic patients

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Objective: people with diabetes mellitus have an increased risk for CVD. So, multivariable risk predictor algorithms and inflammatory biomarkers develop to assess CVD risk. The aim of risk assessment is to categorize population to strengthen preventive medicine. We hypothesised that multivariable risk predictor algorithms along with inflammatory biomarkers cause better CVD risk assessment in Diabetic patients.

Design and method: This research was cross sectional study with randomized sampling. The sample size was 418 diabetic patients that receive routine preventive medicine at Isfahan Shariati hospital's diabetes clinic, in 2014. We collected the latest diabetic patient's information and then calculate the 10-year CVD risk in Framingham risk score calculator and ASCVD risk calculator for each patient. Also we measured hs-CRP after receiving blood sample from every diabetic patient. Finally, all data analysed via Kappa and Weighted Kappa tests.

Results: There was significant correlation between Framingham risk score and ASCVD risk (Kappa: value=0.414, P value<0.05), but there was not significant correlation between ASCVD risk score and Framingham risk score with hs-CRP (Kappa: value=0.25 and -0.003, P value>0.05).

Conclusions: As hs-CRP measurement respectively underestimate and overestimate CVDs risk in comparison with Framingham risk score and ASCVD risk score in low and high risk patients, it seems crossed classification via Framingham Risk Score and ASCVD risk score along with hs-CRP in Diabetic patients who have intermediate risk will strengthen risk assessment.

Keywords: CVD risk, diabetes, hs-CRP, Framingham risk score, ASCVD risk