

## **Is it possible to optimize cardio-vascular risk assessment of diabetic patients?**

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This controversial issue should be considered in the context of two important questions. First: Do we really need to risk stratify patients with diabetes who are already known to be at much higher cardiovascular (CV) risk than the general population. The American heart association considered diabetes as “risk equivalent” to the presence of coronary heart disease (CHD). Patients with diabetes and no history of myocardial infarction were found to show the same risk as non diabetic patients but with a history of myocardial infarction. Thus diabetic patients should be managed aggressively as regards searching for and managing of traditional risk factors e.g. hypertension, dyslipidemia, etc. The result of any additional screening test for nontraditional risk factors will not add and will not lead to modification of management.

Other investigators, however, showed heightened but yet variable degrees of CV risk among diabetic patients. In one study, although most patients with type 2 diabetes had a 10-year cumulative incidence of CV events >20%, yet only those with multiple risk factors were “risk equivalent” to patients with CHD. Therefore, they recommended considering CV risk based on the entire risk factor profile rather than just the presence of diabetes.(1) Only diabetic patients at highest risk can be managed aggressively e.g. using statins to reach LDL targets <70 mg%. This later recommendation is appropriate to underdeveloped communities where resources are obviously limited.

The second question: how can we wisely and cost effectively identify diabetic patients at highest risk? Simple office-based risk factor assessment is the best-studied method for CVD risk prediction. This can be supplemented with an ECG and one of the risk score calculators. The UKPDS Risk Engine is a type 2 diabetes specific risk calculator based on 53,000 patients years of data from the UK Prospective Diabetes Study. CVD risk can be calculated for any given duration of type 2 diabetes based on age, sex, ethnicity, smoking , presence or absence of atrial fibrillation and levels of HbA1c, systolic blood pressure, total and HDL cholesterol.(2) An alternative strategy is to proceed for more advanced tests for risk stratification like echocardiography, carotid intima media thickness, endothelial dysfunction, homocystenemia , or EBCT coronary calcification. I think that up to this moment there is no clear evidence to

justify using these modalities routinely in diabetics especially in underdeveloped countries.

Microalbuminuria is the only emerging nontraditional risk factor that can be used as a routine test for all diabetic patients. Why? First, because several studies have demonstrated that microalbuminuria is a sensitive and very early marker for the susceptibility to CV disease. In the HOPE Study, those with microalbuminuria and diabetes had a 1.97-fold and 2.15-fold increased risk for a composite outcome of myocardial infarction, stroke, or CVD death, as well as all-cause mortality, respectively, compared with subjects with diabetes without microalbuminuria(3).

Second, progression of microalbuminuria is associated with a worsening prognosis ,while lowering albuminuria is associated with CV and renal protection. Thus microalbuminuria is changing its position from a mere risk marker to a therapeutic target and is now a compelling indication for using treatments that can reduce it.(4)

Thus, screening for microalbuminuria should be a routine tool to optimize CV risk assessment of diabetic patients because it is a simple, accurate and relatively inexpensive laboratory test that makes it available and cost-effective especially among source-limited communities.

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