Cardio DIGEST
The easy way to stay up to date with developments in cardiovascular care

Editorial

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Who to evaluate for CAD in diabetes?

The implementation of preventative measures, appropriate and timely diagnosis and effective treatment for coronary artery disease (CAD) are vital components of the care for patients with diabetes, given their increased cardiovascular mortality/morbidity. Who, when and how best to evaluate patients with diabetes and CAD remains controversial, but will depend on individual patients' clinical circumstances, and in particular, will be based on the presence or absence of symptoms.

In asymptomatic patients, emerging data indicates a significant prevalence of increased cardiovascular risk. In cohorts of patients without known CAD in epidemiological studies, there is a significant incidence of myocardial infarction and death (approximately 10–16%) or revascularisation over 3–10 years (Hanefield et al, 1997; UKPDS, 1998). Based on such data, non-invasive testing should be considered in asymptomatic patients with diabetes who are at high risk of CAD. Such patients would have electrocardiographical evidence of CAD (such as myocardial infarction, left bundle branch block or ST segment/ T wave abnormalities at rest), microalbuminuria, male gender, hypertension, insulin use, retinopathy, smoking, lipoprotein abnormalities, peripheral vascular disease and family history of CAD (Gazzaruso et al, 2002). Amongst these, resting electrocardiograph abnormalities and abnormal urinary protein excretion have strongest associations with asymptomatic myocardial ischaemia (Gazzaruso et al, 2002). Utilising such risk factors may enable concentration of sparse resources on the appropriate patients because widespread screening for coronary artery disease in patients with diabetes is not feasible. In individuals with normal exercise tolerance, testing would include an exercise ECG. However, further investigations may well be required, such as stress perfusion imaging to identify inducible ischaemia. Based on the individuals' degree of abnormality on cardiac testing and presence of the above risk factors, coronary angiography may be undertaken.

Such a strategy does encompass uncertainties. Firstly, at present there is little information on the prediction of CAD events in the presence of inducible ischaemia, though small studies do suggest an increased risk of major cardiovascular events (Valensi et al, 2001). Further, questions relate to asymptomatic patients with angiographic abnormalities and as to whether revascularisation in such patients improves survival. This is clearly a difficult issue to address which is currently being investigated by the BARI 2-D study. Once again, the approach would be individualised and no doubt currently will be based on present indications for revascularisation such as severe stenosis of the left main coronary artery, proximal left anterior descending artery, or triple vessel disease. More advanced abnormalities such as left ventricular dysfunction may also tilt the balance in favour of revascularisation.

The situation with symptomatic patients and those with established CAD is considerably easier. However, the difficulty in assessing who to evaluate is further emphasised by the less eloquent symptoms of CAD in diabetes. Non-invasive investigations should be performed in all such patients with mild and stable symptoms. The hierarchy of investigations remains the same, with exercise tolerance testing and stress imaging techniques such as perfusion scanning and echocardiography, the latter providing useful long-term information.

In general, patients with milder symptoms may be managed medically but the issue arises as to when such patients should be re-tested. Based on virtually no information, a period of one to two years has been suggested. Those patients with more significant abnormalities on testing, albeit with mild symptoms, should undergo angiography. Management strategies for other patients, with more unstable symptoms, are of course identical to those patients without diabetes.

Thus whilst the issue regarding symptomatic patients is certainly more clear, the question does remain as to what cardiovascular investigations to perform in asymptomatic patients. The current American Diabetes Association recommendations include yearly ECG as part of standard clinical practice (ADA, 2002). As a process of screening for asymptomatic patients, perhaps this should become the norm in the UK.

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