

## ESC says don't forget to screen for diabetes in CAD patients

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While it is well recognized that patients with diabetes are at risk of developing Coronary Artery Disease (CAD), on [World Diabetes Day](#) the European Society of Cardiology (ESC) highlights the fact that patients with CAD are also at great risk of developing diabetes mellitus (DM).

"This is the reverse of what we usually think," says Professor Hans Erik Botker, an ESC spokesperson from Aarhus University Hospital, Skejby, Denmark. "And it also needs to be remembered that not only should we be checking patients who have suffered an [Acute Myocardial Infarction](#) (AMI) for diabetes, but also there is a need to check everyone diagnosed with stable [Coronary Artery Disease](#) (CAD) as they are also at increased risk."

The link is that [metabolic syndrome](#) (a cluster of conditions including raised [triglycerides](#), reduced HDL cholesterol, raised blood pressure, and raised fasting [plasma glucose](#)) poses a risk factor for developing both CAD and diabetes. "The result is that patients with CAD are at risk of developing diabetes at the same time," says Dr Christoph Saely, from the Academic [Teaching Hospital](#) in Feldkirch, Austria.

A number of studies have indicated the scale of the problem. In the Swedish Registry for Coronary Care study it was found that 21% of patients experiencing AMI were known to have diabetes (1). Furthermore the Euro Heart Survey on Diabetes and the Heart, which recruited patients from 25 countries, found that diabetes was identified in 25% of AMI patients who were not known to have diabetes when

given an [oral glucose tolerance test](#) (2). Finally, a recent study undertaken by Christoph Saely (3), showed that even [coronary patients](#) who were found to be clear of diabetes were at risk of going on to develop diabetes. Saely and colleagues, prospectively tracked 506 non-[diabetic patients](#) who had undergone [coronary angiography](#) for the evaluation of stable CAD.

Over 7.5 years of follow-up, the investigators found that 106 new cases of diabetes emerged (21.1%), which corresponds to a rate of 2.9% per year. The study also showed that for the 293 patients diagnosed with severe CAD, 26.4% went on to develop diabetes compared with 16.4% among those with less extensive disease. When the research team scrutinized the various metabolic [risk factors](#), they observed that besides fasting glucose, low HDL cholesterol, elevated triglycerides, and a large waist circumference were strong predictors of the development of diabetes among coronary patients.

Professor Lena Jonasson, an ESC spokesperson from Linköping University, Sweden, comments, "This study underlines the need for good infrastructures to be put in place that allow all patients with CAD to be screened not only for diabetes at diagnosis, but to be followed on a regular basis."

Such thinking is clearly in line with the ESC Clinical Practice Guidelines "[Diabetes, Pre-Diabetes and Cardiovascular Diseases](#)", published in 2007, which recommended that every patient admitted to hospital for AMI should be screened for diabetes, and that all patients with a diagnosis of CAD should be followed up for diabetes on a regular basis. While the 2007 ESC Clinical Practice Guidelines recommended oral glucose tolerance tests, the current consensus recommendations from the European Association for the Study of Diabetes, American Diabetes Association, International Federation of Clinical Chemistry and Laboratory Medicine, and the International Diabetes Federation

recommend the haemoglobin A1C assay test. "This is an altogether easier approach because you just need to take a blood sample," says Botker.

But there can be issues around whether patients with CAD are followed up by cardiologists in hospitals or family doctors. "The reality is that cardiologists only follow patients carefully for a very short period and then refer them back to GPs. Whether they have further tests for diabetes depends on the individual interests of family doctors placing patients at risk of falling through the net," says Jonasson.

Identifying patients who have both CAD and diabetes is essential because they need to be treated more aggressively with both drugs and life style interventions. "When patients have both diabetes and CAD the problem is that risk factors aren't just simple additives, they multiply each other putting patients at greater risk of a worse outcome for both conditions," says Professor Keith Fox, a cardiologist from the University of Edinburgh and chair of the ESC Congress Programme Committee.

From the perspective of drug therapies patients with both diabetes and CAD benefit from potent statins (like atorvastatin) irrespective of their baseline cholesterol levels, antiplatelet therapy with aspirin, blood pressure control with ACE inhibitors and ARBs (these agents have been shown to have a favourable influence on progression of diabetic nephropathy), and glucose lowering therapy.

Patients can also benefit from lifestyle interventions such as weight management, changing their diets (including plenty of fruits, vegetables, and whole grains) and increasing physical activity. "Above all Increasing levels of exercise may be the most effective approach because it can reduce the low-grade systemic inflammation that's associated with both CAD and diabetes," says Jonasson.

So convinced are Jonasson and her Swedish colleagues of the benefits of exercise for patients with both CAD and diabetes, that they prescribe sessions in the local gym. "We give them different doses of exercise specifying the intensity and the type of exercise. Providing such clear directions helps compliance." The spotlight of the next ESC Congress 2013 in Amsterdam, The Netherlands, 31 August to 4 September, will be how the heart interacts with other organs. "The heart should not be considered in isolation, and so we'll be looking at how heart disease interacts not only with [diabetes](#), but also with other organs systems such as the kidneys, brain, lungs, and the immune and haemopoietic systems", says Professor Fox.

**More information:** (1) Eur Heart Journal 2003; 24:838-844

(2) Eur Heart Journal 2004;25:1880-1890

(3) Dr Christoph Saely works in the team of Heinz Drexel at the VIVIT Institute in Feldkirch, Austria, reported at the European Association for the Study of Diabetes meeting in October 2012C Saely, A Vonbank, P Rein, et al. Coronary artery disease as a risk for developing type 2 diabetes mellitus. Abstract no. 339. Presented at 48th Annual Meeting of the European Association for the Study of Diabetes. 1-5 October 2012. Berlin, Germany.

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