

Erectile dysfunction may signal a broken heart

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Erectile dysfunction is always a matter of the heart, but new research shows that more than romance is at stake. Two new studies of men with type 2 diabetes found that erectile dysfunction (ED) was a powerful early warning sign for serious heart disease, including heart attack and death.

One of the studies also showed that cholesterol-lowering medications could cut the risk of heart problems by about one-third—and suggested that Viagra and other compounds in the same drug family might offer similar protection.

The research, which was published in the May 27, 2008, issue of the *Journal of the American College of Cardiology (JACC)*, underscores the importance of encouraging men to report ED to their physicians, and of focusing treatment not only on overcoming sexual dysfunction but also on improving overall cardiovascular health.

“The development of erectile dysfunction should alert both patients and healthcare providers to the future risk of coronary heart disease,” said Peter Chun-Yip Tong, Ph.D., an associate professor in the Department of Medicine & Therapeutics at The Chinese University of Hong Kong, Prince of Wales Hospital, Hong Kong. “Other risk factors such as poor blood glucose control, high blood pressure, high cholesterol levels, smoking and obesity should be reviewed and addressed aggressively.”

Diabetes, erectile dysfunction and heart disease share an ominous link:

damage to the blood vessels by high blood sugar levels. The same process that hinders the extra blood flow needed to maintain an erection can have even more serious consequences in the heart. “The first event is probably endothelial dysfunction—when the smoothness and reactivity of the blood vessel are damaged,” said Dr. Tong. “This process encourages local inflammation on the inner surface of the blood vessels and the deposition of cholesterol, resulting in formation of clots and atherosclerosis. Therefore, there is a high risk of blockage of blood vessels in the heart, which can lead to a heart attack.”

Men typically show signs of ED more than three years before the onset of symptoms of coronary heart disease. In one study of diabetic men, symptoms of ED always preceded coronary symptoms.

In the Hong Kong-based study, Dr. Tong and his colleagues set out to determine whether ED could be used as an early warning sign of poor cardiovascular health. Researchers recruited 2,306 men with type 2 diabetes, performing a thorough medical evaluation of diabetic control and complications, including damage to the kidneys, eyes and cardiovascular system. At the beginning of the study, just over one-quarter of the study participants had ED. None of the participants had any signs or history of heart disease, vascular disease or stroke.

The researchers followed-up the patients for an average of four years. During that time, 123 men either suffered a heart attack, died from heart disease, developed chest pain caused by clogged arteries, or needed bypass surgery or a catheter procedure to restore blood flow to the heart. Men who had ED at the beginning of the study were far more likely to develop one of these signs of coronary heart disease—or a “CHD event”—than were men who initially did not have ED. Statistical analysis showed that out of every 1,000 diabetic men with ED, 19.7 could be expected to experience a CHD event each year, as compared to only 9.5 of 1,000 diabetic men without ED.

The research team then performed an analysis that included many different characteristics that, like erectile dysfunction, were associated with the development of CHD, including age, high blood pressure, the need for cholesterol- or blood-pressure-lowering medications, the duration of diabetes, and damage to the kidneys or the eyes as a result of diabetes. Even when these characteristics were taken into account, ED was found to be an independent early warning sign of coronary heart disease. In fact, ED signaled a 58 percent increase in the risk of CHD. Only spillage of large amounts of protein in the urine—a sign of extensive kidney damage—was a stronger warning sign, doubling the risk of heart disease.

The second study, conducted by researchers from four medical centers in Italy, focused on 291 men who not only had type 2 diabetes but also silent CHD discovered by stress testing and confirmed by x-ray angiography. Of these, 118 had ED at the beginning of the study. Lead investigator Carmine Gazzaruso, M.D., Ph.D., and his colleagues followed-up patients for an average of nearly four years, documenting major adverse cardiac events (MACE), which they defined as not only CHD events but also stroke, mini-stroke (transient ischemic attacks) and arterial disease in the legs. They found that patients who had ED at the beginning of the study were twice as likely to suffer a major adverse cardiac event when compared to those without ED.

The study also showed that among patients who were taking cholesterol-lowering statins, the risk of MACE was reduced by one third (hazard ratio, 0.66, $p = 0.036$). Viagra and other medications in a family known as 5-phosphodiesterase (5PDE) inhibitors also appeared to reduce the MACE risk (hazard ratio, 0.68); however this finding was just beyond the cusp of being statically significant ($p = 0.056$).

“These are important studies,” said Robert A. Kloner, M.D., Ph.D., F.A.C.C., a professor of medicine at the Keck School of Medicine at the

University of Southern California, and director of research for the Heart Institute at Good Samaritan Hospital in Los Angeles. “While we have known that ED shares many common risk factors with CHD, such as hypertension, smoking, dyslipidemia and diabetes, what is new here is that ED remained a significant risk factor for developing heart disease after controlling for other cardiovascular risk factors.

“Men should know that ED is a true harbinger of atherosclerotic coronary heart disease,” he said.

Dr. Kloner, who wrote an editorial about the new studies in the same issue of JACC, also noted that not only have statins been shown to reduce the risk of cardiovascular illness in diabetic patients, controlling blood pressure and other risk factors is also critical.

“In diabetic patients, it is important to not only control the blood sugar level, but also to keep blood pressure below 130/80 mmHg and reduce ‘bad’ (low-density-lipoprotein, or LDL) cholesterol to less than 100 mg/dL. If a patient smokes, a smoking cessation program is crucial,” Dr. Kloner said.

Dr. Tong said that he and his colleagues are continuing to analyze a database of nearly 10,000 patients with diabetes in an attempt to answer several remaining questions about the link between ED, diabetes and heart disease. For example, will improvements in the control of blood sugar and other cardiovascular risk factors reduce the likelihood of developing erectile dysfunction or suffering a heart attack or other serious heart disease" Are patients who have ED in addition to diabetes-related eye problems and kidney problems at higher risk for death or cardiovascular disease" And if so, how great is the increased risk"

“All of these questions are relevant to those who suffer from diabetes,” Dr. Tong said. “The information we find will help patients to focus on

improving their own health.”

Source: American College of Cardiology

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