DEPRESSION APPEARS TO BE LINKED TO REDUCED BLOOD PRESSURE CONTROL IN HEART PATIENTS

DURHAM, N.C. – Cardiologists have long noted that many heart patients suffer from depression, but it has always been a chicken-and-egg issue: which came first, the heart disease or the depression?

A researcher at Duke University Medical Center may have found a clue to the conundrum. In a small study, she and a colleague found that the circulation system in people who are highly depressed does not appear to control changes in their blood pressure very well. Such a lack of autonomic regulation can put these patients at risk of heart damage from improperly regulated heart beats.

The loss of this autonomic function was substantial – one-third of normal regulation – the researchers report in the March issue of the American Heart Journal.

But they also say there is an effective and simple treatment for patients who may be suffering from this phenomenon. Exercise is the most effective way of restoring this function, called baroreflex sensitivity, said the study’s author, Duke’s Lana Watkins, Ph.D.

Baroreflex sensitivity is a phenomenon by which receptors located along the walls of blood vessels respond to changes in blood pressure. These receptors are connected to the heart by nerves, which carry the message to pump faster or slower in response to pressure changes.

“As a result of this study, it appears that reduced baroreflex sensitivity (BRS) may be a marker of increased risk for patients with heart disease and symptoms of depression,” Watkins said. Her colleague in the study was Paul Grossman, Ph.D, at the Lown Cardiovascular Center in Brookline, Mass., which funded the study.

“In order to demonstrate the predictive value of measuring BRS in heart patients, a larger study needs to be conducted,” she said. “However, while our findings are speculative, they are intriguing. In our group of heart patients, those who scored high on tests of depression had a 30 percent reduction in their baroreflex control.”

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As the heart pumps more blood and pressure rises, the arteries expand, which in turn stretches the receptors along the arterial walls. In response to stretching, the receptors send a signal to the heart to slow its pumping.

“In this way, the baroreflex system attempts to maintain an equilibrium which helps guard against sudden cardiac events,” Watkins said. “The baroreceptors of depressed heart patients don’t seem to have the same sensitivity to blood pressure changes.”

Past research already has shown that depression is an independent risk factor for future cardiac events in patients with coronary artery disease. Furthermore, according to Watkins, studies have shown a link between death following heart attack among depressed heart patients and the occurrence of irregular heart beats known as arrhythmias.

“One way that depression is a risk factor for cardiac events is that it creates a situation where baroreflex control is low, which could explain why depressed people are a greater risk,” Watkins said.

Out of a group of 66 patients, researchers selected 14 patients who scored the lowest in commonly used tests for depression, and compared their baroreflex control to 16 patients who scored the highest on the tests. Using a new technique, researchers were able to measure subtle changes in heart rate and blood pressure between heart beats.

For heart attack patients who may be depressed, Watkins recommends exercise, since research has shown that regular physical activity can restore a degree of baroreflex control.

“Exercise seems to have beneficial effects on the electrical stability of the heart,” Watkins said. “Typically after heart attacks, people tend to become more sedentary. However, the results of the study add further weight to the argument that exercise after a heart attack is beneficial.”

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