

Depressed patients have more frequent chest pain even in the absence of coronary artery disease

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Depressed patients have more frequent chest pain even in the absence of coronary artery disease, according to results from the Emory Cardiovascular Biobank presented at ESC Congress today by Dr Salim Hayek, a cardiologist at Emory University School of Medicine in Atlanta, Georgia, US. The findings suggest that pain and depression may share a common neurochemical pathway.

"Depression is a common and well recognised risk factor for the development of [heart disease](#)," said Dr Hayek. "Patients with known heart disease and depression tend to experience chest pain more frequently. However until now, it was not known whether that association was dependent on underlying [coronary artery disease](#)."

The current study assessed whether depression was associated with chest pain independently of underlying [coronary artery](#) disease. The study included 5 825 adults enrolled in the Emory Cardiovascular Biobank between 2004 and 2013. The biobank is a prospective registry of patients undergoing cardiac catheterization at three Emory Healthcare sites in Atlanta.

Patients had an average age of 63 years, 65% were male and 22% were African Americans. Prior to [cardiac catheterization](#) patients completed the Patient Health Questionnaire-9 (PHQ-9) to assess depressive symptoms and the Seattle Angina Questionnaire to assess chest pain frequency in the past month. The presence and severity of coronary artery disease was determined by angiogram. Patients completed the same questionnaires at one and five years post-procedure.

The researchers found that depression severity as measured by the PHQ-9 was independently

associated with the frequency of chest pain, indicating that patients with more severe depression had more frequent chest pain. Even patients with mild depression had more frequent chest pain than patients with no depressive symptoms. The findings remained after adjusting for coronary artery disease severity, age, gender, race and traditional cardiovascular [risk factors](#) including smoking status, body mass index, blood pressure and blood lipid levels.

Patients with depression, whether women or men, were three times more likely to experience more frequent chest pain than those without depression. This was found to be true in patients with and without obstructive coronary artery disease.

A reduction in the severity of depression symptoms was associated with a decrease in the frequency of chest pain at follow-up. Most importantly, patients with depression who underwent revascularization did not have an improvement in chest pain frequency at 1 year follow-up.

"We found that depression is strongly associated with the frequency of chest pain in adults with and without underlying coronary artery disease, and that patients with depression and heart disease did not have an improvement in their chest pain frequency even after coronary intervention," said Dr Hayek. "One possible explanation for our findings is that pain and depression share a common neurochemical pathway."

He added: "Although depression is established as a risk factor for heart disease, there are no clear recommendations in the US for depression screening in patients with cardiovascular disease. ESC prevention guidelines recommend assessing patients for depression to prevent cardiovascular disease. Although our findings do not establish

causality, they do suggest that depression is an important confounder of the relationship between chest pain and heart disease. Screening for depression in patients presenting with chest pain should be considered, and studies examining the effect of appropriate anti-depressive therapy on chest pain are needed."

Dr Hayek concluded: "The fact that chest pain frequency at follow-up was decreased in [patients](#) whose depressive symptoms improved indicates that treating [depression](#) may help alleviate chest pain, after obstructive coronary artery disease as a cause of [chest pain](#) has been ruled out. This needs to be confirmed in randomised controlled trials."

More information: Dr Hayek will present the abstract 'Depression is the strongest predictor of angina and is independent of underlying coronary artery disease severity in patients with cardiovascular disease'

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