

Damage inflicted during cardiac attacks more widespread

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Cholesterol crystals released in the bloodstream during a cardiac attack or stroke can damage artery linings much further away from the site of the attack, leaving survivors at greater risk than previously thought.

George Abela, a physician in Michigan State University's College of Human Medicine and chief of the Department of Medicine's cardiology section, is leading innovative research into the role that the crystallization and expansion of cholesterol play in heart attacks, strokes and other cardiovascular events in humans.

He presented his latest research this week at the American Heart Association's Scientific Sessions meeting in New Orleans.

In recent medical trials, Abela and his team of researchers tested carotid arteries in a laboratory by injecting cholesterol crystals into them.

"Cholesterol has been shown to expand when crystallizing and then be released into the circulation following a cardiac event," Abela said. "We found that the flow of sharp-ended crystals in arteries damage the lining of arteries and decrease the ability of arteries to dilate properly at intervals far away from the site of the attack."

Abela compared the process to a tree, with the trunk as the site of the cardiac event and the branches representing arteries where damage is afflicted far away from the trunk.

"These findings have important clinical implications," Abela said. "We found the original injury was being transmitted downstream. We may need to expand the testing that we have patients undergo to make sure more damage is not being done during a cardiac attack or stroke."

The American Heart Association's Scientific Sessions annual meeting is the premier cardiovascular research and instructional meeting in the world, drawing nearly 20,000 doctors, researchers and cardiac professionals.

Source: Michigan State University

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