New treatment potential for heart attack sufferers

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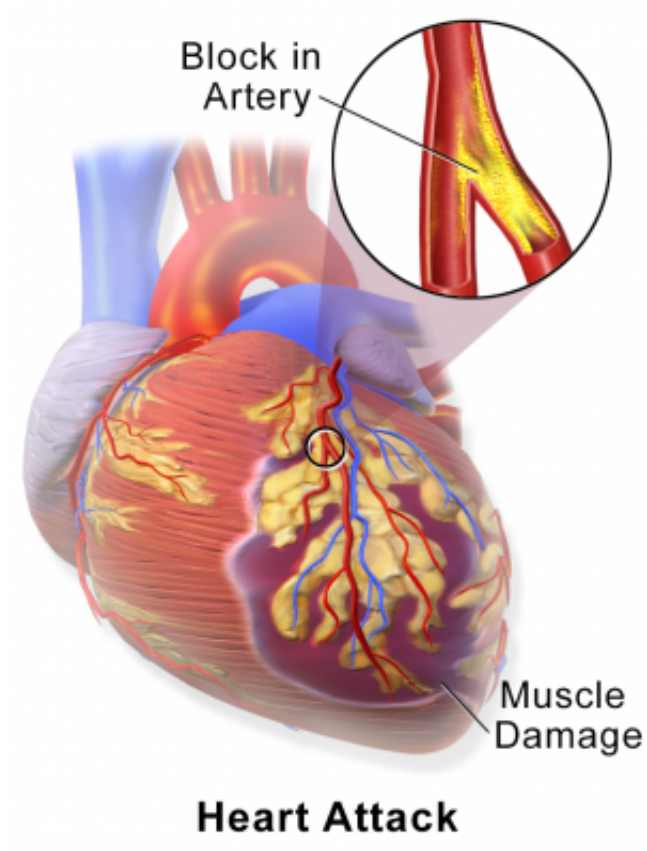

Myocardial Infarction or Heart Attack. Credit: Blausen Medical Communications/Wikipedia/CC-A 3.0

New hope in the fight against cardiovascular disease has arrived, following breakthrough research identifying a pigment in our bile which could protect us.

A fluid produced by the liver and stored in the gallbladder, bile's function is to aid the digestion process.

Now Dr Andrew Bulmer from Griffith University's Menzies Health Institute Queensland (MHIQ) has found that mildly elevated levels of a bile pigment called bilirubin may provide natural protection from heart attacks and help to stave off cardiovascular disease.

Published recently in the *International Journal of Cardiology*, the study shows that when hearts are infused with bilirubin following a heart attack, the pigment reduces damage and improves heart function during recovery.

"This is a very important finding as very few drugs are able to be administered following a heart attack to improve heart function," says Dr Bulmer. "Generally, if it is a small heart attack people can survive. However there is a 20 per cent mortality rate from heart attack, with approximately 50,000 heart attack sufferers each year in Australia.

"Generally, bilirubin was just associated with people having jaundice; however we have now shown that mildly elevated bilirubin is actually beneficial, naturally protecting an individual against cardiovascular disease."

Additional research - just published in Free Radical Biology and Medicine - has shown that higher levels of bilirubin can protect the circulation from oxidative damage that causes blood vessel disease. "We believe that this protection could be related to recently identified anti-oxidative property of the bilirubin molecule," says Dr Bulmer.

"Inflammation is the main culprit of damage to the body and is caused by over-active white blood cells that release 'free radicals'. It appears our natural bilirubin can protect from these free radicals during chronic

inflammatory diseases like cardiovascular disease, kidney disease and diabetes."

Currently, 5-10 per cent of the population is believed to have mildly elevated levels of bilirubin in their blood - a condition with no negative side effects called Gilbert's Syndrome. People with this syndrome have a 30-60 per cent reduced chance of having cardiovascular disease and a 50 per cent reduced risk from dying of any cause.

Dr Bulmer says that his findings could have positive implications for reducing health risks and improving life expectancy, as a result of increasing the bilirubin concentration in people who have low levels of the pigment in blood.

"Not only is there a benefit in being able to use bilirubin as a biomarker for measuring people's future risk of various chronic diseases, there is a very real possibility it could be used as a treatment after a heart attack to reduce damage to the heart and possibly improve survival," he says.

These possibilities are part of ongoing research at MHIQ's Heart Foundation Research Centre.

Provided by Griffith University