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# New imaging technology reveals prevalence of 'silent' heart attacks

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So-called "silent" heart attacks may be much more common than previously believed, according to researchers at Duke University Medical Center.

Studies show that each year, nearly 200,000 people in the U.S suffer a heart attack but may not realize it. These "silent" heart attacks aren't noted because they don't cause any pain - or at least any pain that patients believe is related to their heart - and they don't leave behind any telltale irregularities on electrocardiograms (ECGs).

New imaging research from Duke University Medical Center appearing in *PLoS Medicine* suggests that these heart attacks (now called unrecognized myocardial infarctions, or UMIs) may be happening much more frequently than physicians had suspected. Duke investigators also found that these attacks were associated with a surprisingly high risk of untimely death.

"No one has fully understood how often these heart attacks occur and what they mean, in terms of prognosis," says Han Kim, M.D., a cardiologist at Duke and the lead author of the study. "With this study, we can now say that this subset of heart attacks, known as non-Q wave UMIs, is fairly common, at least among people with suspected coronary artery disease."

Physicians can usually tell when a heart attack has recently occurred by signature changes on ECGs and in certain blood enzyme levels. But if a

heart attack happened in the distant past, physicians rely on the appearance of a specific alteration on an ECG called a Q-wave, which signals the presence of damaged tissue.

"The problem is, not all UMIs result in Q-waves on the electrocardiogram. Those that don't are called non-Q-wave myocardial infarctions. Those are the ones we haven't been able to count because we've never had a good way to document them," says Kim.

Kim believed that using delayed enhancement cardiovascular magnetic resonance, or DE-CMR, might be good way to get an idea about how frequently non-Q-wave myocardial infarctions occur. Previous studies had shown that DE-CMR was particularly adept in discerning damaged tissue from healthy tissue.

Researchers used DE-CMR to examine185 patients suspected of having coronary artery disease but who had no record of any heart attacks. All of them were scheduled to undergo angiography to find out if excess plaque had narrowed or blocked any of their arteries. Investigators followed the patients for two years to see if the presence of any unrecognized non-Q-wave heart attacks were associated with a higher risk of death.

They found that 35 percent of the patients had evidence of a heart attack and that non-Q-wave attacks were three times more common than Q-wave UMIs. Non-Q-wave attacks were also more common among those with more severe coronary artery disease. In addition, researchers discovered that those who suffered non-Q-wave UMIs had an 11-fold higher risk of death from any cause and a 17-fold higher risk of death due to heart problems, when compared to patients who did not have any heart damage.

"Right now, there are no specific guidelines about how patients with

UMIs should be treated," says Kim. "If patients with UMIs happen to be identified, they are usually treated similarly to those patients where heart disease has already been documented. Future studies will likely examine how common unrecognized non-Q-wave heart attacks are in other patient groups and how these UMIs should be treated."

Source: Duke University Medical Center (news : web)