
Calm Down! Intense Anger Raises Heart Attack Risk



The risk of heart attack has been found to be 8.5 times higher in the two hours following an acute episode of anger than during the "usual frequency" patterns of anger. The findings emerged from a well controlled study in which acute coronary blockage was angiographically confirmed in patients hospitalised for suspected heart attack. This elevated state of anger or anxiety preceding the myocardial infarction (MI, heart attack) was also found to be significantly higher than at the same time the preceding day.

A report of the study is published in the *European Heart Journal: Acute Cardiovascular Care*, a journal of the European Society of Cardiology.

The study thus appears to confirm what has been suggested in earlier studies and indeed by anecdotal experience, that anger can act as a trigger for MI, and thus highlights a need, say the authors, "to consider strategies to protect individuals most at risk during times of acute anger".

The study was an investigation of patients suspected of MI and admitted for primary angioplasty at the Royal North Shore Hospital in Sydney, Australia, between 2006 and 2012, and assessed by coronary angiography.⁽²⁾ Of 687 patients initially assessed, 313 were confirmed with occluded coronary blood flow by angiography and were enrolled in the study.

Anger, as evident over the 48 hours preceding the onset of symptoms, was self-assessed by questionnaire according to a seven-point scale, with 1 defined as "calm", and 7 as "enraged, out of control, throwing objects, hurting yourself or others". For study purposes, the threshold of acute anger was defined by level 5 - "very angry, body tense, maybe fists clenched, ready to burst".

Analysis of responses showed that seven of the 313 confirmed MI cases (2.2%) had reached anger of at least level 5 within the two-hour preceding the onset of symptoms. In addition, one participant had reached anger level 5 within four hours of the MI, and anger level 4 ("moderately angry, so hassled it shows in your voice") was reported by two participants within two hours of MI and by three participants within four hours.

Based on the subjects' usual frequency for anger, the relative risk of onset of MI symptoms occurring within two hours of reaching anger level 5 or above was calculated as 8.5 (95% CI 4.1–17.6), an eight-fold greater level of risk than that associated with normal levels.

Statistical associations with lower levels of anger, or anger occurring over two hours before symptom onset did not reach statistical significance. However, high levels of anxiety (greater than the 90th percentile on a validated anxiety scale) were associated with a 9.5-fold increased risk of triggering MI in the two hours after the anxiety episode when compared with anxiety levels the previous day.

The investigators suggest that findings such as these coincide with an "increased acceptance of the role of psychological factors, both acute and chronic, in the onset of acute MI, sudden cardiac death and stroke" and "are consistent with previous reports in other populations". Unlike most other studies, however, this study could confirm angiographically that the subjects had indeed suffered an MI, and thus "adds to the small, but growing, body of evidence linking acute emotional triggers with onset of MI".

Among the events reported to have prompted the subjects' anger-triggered MI were arguments with family members, argument with others, work anger and driving anger. Other studies have found arguments with family members and conflicts at work the most frequent contributors.

In commenting on the everyday relevance of the results, Dr Thomas Buckley, a senior lecturer and researcher from the University of Sydney and Royal North Shore Hospital, Sydney, said: "While the absolute risk of any one anger episode triggering a heart attack is low, our data demonstrates that the danger is real and still there."

He explained that the increased risk of MI following intense anger or anxiety is "most likely the result of increased heart rate and blood pressure, tightening of blood vessels and increased clotting, all associated with triggering of heart attacks".

Dr Buckley advised that propensity to anger or anxiety should be assessed when managing an individual with heart disease or preventing heart disease in others. "It should be part of helping individuals to take care of themselves," he said. "Potential preventive approaches may be stress reduction training to limit the responses of anger and anxiety, or avoiding activities that usually prompt such intense reactions. And for those at very high risk, one could potentially consider protective medication therapy at the time of or just prior to an episode, a strategy we have shown to be feasible in other studies. Minimising other risk factors, such as hypertension or smoking, would also lower risk".

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Source: European Society of Cardiology

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