

# Mayo Clinic identifies new risk factor for heart attack patients

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If you go to the hospital within one to two hours of the onset of symptoms of a heart attack, your chances of getting proper treatment are nearly 70 percent greater than those who wait 11 to 12 hours before seeking treatment, according to results presented today at the American Heart Association's Scientific Sessions 2007 in Orlando, Fla.

"This research should emphasize to patients that getting help immediately, by calling 911, gives them the best chance of receiving treatments we know can help save their lives or lessen the damage to their hearts," says Henry Ting, M.D., lead Mayo Clinic cardiovascular researcher on the national study. "If patients wait at home for hours with symptoms and come in later, unfortunately they aren't getting the proper treatments."

The most serious type of heart attack is known as an ST-elevation myocardial infarction (STEMI). In a STEMI, critical arteries supplying the heart with blood are blocked. Previous studies have shown that the best treatment for STEMI patients is reperfusion therapy -- when a patient's blocked artery is opened by inflating a balloon at the site of the blockage or by delivering clot-dissolving medication, thus restoring blood flow to heart muscle.

The study is the largest and most detailed review of multiple elements in patient records contained in a national heart attack database. These elements are: time delay from onset of symptoms to hospital arrival; treatment with reperfusion; and treatment outcome. After analyzing

440,398 heart attack incidents from 1995 to 2004 in the National Registry of Myocardial Infarction, the researchers identify for the first time a novel risk factor for heart attack deaths that appears to have a readily available solution: comply with the American Heart Association/American Cardiology Association guidelines now in place. The guidelines state that if a patient has symptoms consistent with a heart attack which are not relieved after five minutes, or after placing one nitroglycerin pill under the tongue, the patient should call 911.

The records that the team reviewed document how long it took for 440,398 heart attack patients to arrive at the hospital after their symptoms started, and correlate arrival time with the rates of reperfusion therapy they received upon arriving at the hospital.

Results show that:

- Of patients who arrived at the hospital within one to two hours of onset of heart attack, 77 percent received reperfusion therapy.
- Of patients who arrived at the hospital within two to three hours of onset of heart attack, 73 percent received reperfusion therapy.
- Of patients who arrived at the hospital within 11 to 12 hours of onset of heart attack, only 46 percent of patients received reperfusion therapy.

“Although current guidelines recommend that STEMI patients who reach the hospital within 12 hours after their symptoms started should receive reperfusion therapy, we found that this is not happening,” Dr. Ting says. “These delays represent a novel and modifiable risk factor and warrant further investigation. These results show that gaps remain in quality of care in patients with STEMI -- first, we need to encourage patients with potential heart attacks to come to the hospital as early as possible; second, hospitals need to implement systems that treat all

eligible patients rapidly regardless of the delay in presentation.”

Source: Mayo Clinic

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