# Many patients having heart attacks still wait more than 2 hours to go to the hospital

November 8 2010

Long delays between developing symptoms and going to the hospital are common among patients with a certain type of heart attack, according to a report in the November 8 issue of *Archives of Internal Medicine*.

Professional guidelines recommend that patients call 9-1-1 if symptoms suggestive of a heart attack do not improve within five minutes, according to background information in the article. Medical treatment is most urgent in patients with ST-segment elevation myocardial infarction (STEMI; a certain pattern on an electrocardiogram during a heart attack). However, patients cannot tell whether their symptoms indicate a STEMI or non-STEMI, so getting to the hospital quickly is critical no matter which type of heart attack they are experiencing.

"For patients with STEMI, studies have documented that the average delay time from symptom onset to hospital presentation is two hours and has not decreased substantially despite multiple public education campaigns," the authors write. "While delays from symptom onset to hospital presentation have been linked to worse outcomes in patients with STEMI, the impact of such delays in patients with non-STEMI is unknown."

Henry H. Ting, M.D., M.B.A., of Mayo Clinic, Rochester, Minn., and colleagues studied 104,622 patients with non-STEMI from 568 hospitals between 2001 and 2006. The hospitals were all participating in a national study (Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes With Early Implementation of the

American College of Cardiology/American Heart Association Guidelines, or CRUSADE) for which they collected data on patient demographic and clinical information, physician and hospital characteristics, medication histories and treatment regimens and outcomes.

The delay in arriving to the hospital after symptoms remained stable between 2001 and 2006, with a median (midpoint) delay of 2.6 hours. About 60 percent of patients had delay times longer than two hours, and 11 percent of patients arrived at the hospital more than 12 hours after experiencing symptoms. Delay times were not consistently or strongly associated with patients' risk of dying in the hospital.

Patients who were older, female, a race other than white, had diabetes or currently smoked were more likely to have longer delays. "However, the magnitude of effect (less than 10 percent) on delay time from each factor was overshadowed by the overall duration of delay (median delay time, 2.6 hours)," the authors write. "Therefore, interventions aimed at improving patient awareness of symptoms and responsiveness to seek care will likely need to target all patients at risk for myocardial infarction [heart attack], and not just those who have individual risk factors (age, sex or diabetes) for longer delay time."

In addition, patients who arrived at the hospital during weekday and weekend nights (between 12 a.m. and 8 a.m.) had 25-percent shorter delay times than those who arrived between 8 a.m. and 4 p.m. on weekdays. "While we cannot determine why patients decided to seek care more quickly at night, potential hypotheses include heightened fear during the night when patients may be alone at home, higher tolerance of symptoms during the daytime when a patient is active or at work or a perception of shorter waiting times and less crowding in emergency departments during the night."

"Novel strategies to improve patient responsiveness to seek care are critical and important for both patients with STEMI or non-STEMI," they conclude.

**More information:** *Arch Intern Med.* 2010;170[20]:1834-1841.

Provided by JAMA and Archives Journals