Emergency room test for heart enzyme troponin, with normal EKG, rules out heart attack

By ACSH Staff — March 31, 2014

Swedish researchers presented a paper at the meetings of the American College of Cardiology (published simultaneously in the JACC) showing that a new, rapid test for a cardiac enzyme, when combined with a normal electrocardiogram, rules out an acute heart attack (MI) with 99.8 percent accuracy.

The scientists, led by Dr. Nadia Bandstein of the Karolinska Institute Hospital in Stockholm, evaluated ER visits for chest pain among over 14,500 patients with their new rapid troponin-T test, plus standard 12-lead EKGs. These patients were followed over (at least) 30 days to assess the validity of the blood test + cardiogram to accurately predict the absence of an acute heart attack among those with undetectable troponin-T and a normal EKG over the 30-days after ER discharge. They also looked for any instances of mortality during the 30-days post-ER visit: no death occurred in those discharged without an MI diagnosis.

The results were quite dispositive: among the 8900 patients with negative tests, only 15 were subsequently determined to have sustained an acute MI: 99.8 percent predictive power, in other words.

Dr. Bandstein told MedPage Today what she believed would be the benefit of such rapid and relatively certain diagnoses in the ER: We believe that with this strategy, 20% to 25% of admissions to hospital for chest pain may be avoided," noting that at their center that could mean 600 to 700 admissions each year. "It may also reduce overcrowding in the ED and save time for both patient and doctor."

ACSH’s Dr. Gil Ross added this: Cardiac troponin-T has been in use in the U.S. ERs for a decade or so, and this test has provided important help in diagnosing, and more often ruling out, a diagnosis of acute MI. The new Swedish approach can only help here, providing even more rapid diagnostic yield and thereby reducing the clinical load on ER docs and over-filled ER and CCU
beds, saving time, money, and literally heartache among patients and their families.

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