**Diagnostic value of negative cardiac markers or nuclear imaging in an emergency department based chest pain center**

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**Objective:**
To compare the 30-day outcomes of patients with negative serial cardiac biomarkers or negative cardiac nuclear imaging in an emergency department (ED) based chest pain center (CPC) . Nuclear imaging (NI) identifies cardiac ischemia, while cardiac markers identify muscle necrosis. We hypothesized that negative NI would be superior to negative serial markers at predicting the absence of a 30-day cardiac event, thus allowing a patient safe discharge from the ED.

**Methods:**
All patients with a chief complaint of chest pain who were greater than 25 years old, or with cocaine usage within 96 hours of initial presentation, were eligible for enrollment. Exclusion criteria included a presentation electrocardiogram with acute ST-segment elevation or depression >1mm in 2 contiguous leads, history of CAD, hemodynamic instability, or clinical syndromes consistent with unstable angina. The protocol consisted of ST segment monitoring, with serial myoglobin, CK-MB, and cardiac troponin T determinations at 0, 3, and 6 hours. NI utilizing single photon emission computerized tomography with sestamibi was performed within 2 hours of ED presentation. Cardiac events within 30 days of hospital discharge (defined as MI, PTCA, CABG, VT/VF arrest, CHF admission, abnormal angiogram or cardiac related death) were obtained. This follow-up was performed by medical record review, phone contact, letter, and review of national and state death registries.

**Results:**
The protocol included 485 patients between October 1998 and February 2000; complete marker and NI data were available for 470 and 485 patients, respectively. Both testing strategies had high and comparable diagnostic utility in our patient population (NI: specificity=92%, negative predictive value=98%; cardiac markers: specificity=95%, negative predictive value=98%) .

**Conclusion:**
A negative nuclear imaging test or cardiac markers predict similarly low incidences of 30-day cardiac events in ED patients evaluated for chest pain. Use of either modality could assist in ED discharge decisions.