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## Changes in diagnostic classification of acute coronary syndromes as myocardial infarction versus unstable angina during 1987-1999

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Among patients with non-ST elevation acute coronary syndromes, the diagnostic distinction between unstable angina (USA) (ICD-9 411) and myocardial infarction (MI) (ICD-9 410) depends largely on serum markers of myocardial necrosis. The sensitivity of newer biomarkers such as troponin, compared to older markers such as creatine kinase-MB (CK-MB), may have changed the proportion of patients assigned to MI codes, with considerable implications for both epidemiology and reimbursement.

**Methods:** We hypothesized that the widespread clinical adoption in the mid to late 1990's of serum troponin to diagnose MI might result in a temporal shift in the proportions of patients with the discharge diagnosis of MI vs. unstable angina. The ARIC study used community surveillance to monitor the epidemiology of coronary heart disease among people 35-74 years of age in 4 communities with a catchment area of 360,000 subjects. We identified annual cross sectional samples admitted with cardiac chest pain and ST-depression or T-wave inversion on the initial ECG, then tabulated hospital-determined primary discharge diagnoses by year.

**Results:** Beginning in the early 1990's there is a gradual fall in the primary discharge diagnosis from unstable angina and a rise in MI. The clinical adoption of serum cardiac troponin measurement in 1996 coincides with a more abrupt shift in discharge diagnosis from unstable angina to myocardial infarction (USA in 22% of cases in 1991-93 vs. 13% of cases in 1994-96 vs. 3% of cases in 1997-99).

**Conclusion:** Patients presenting with acute coronary syndromes in the late 1990's were much more likely to be diagnosed as having a myocardial infarction rather than angina, possibly due to introduction of the troponin assay.

Number of admissions by primary discharge diagnosis for patients with cardiac chest pain and ST depression or T-wave inversion

