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The Value of Cardiac Enzymes in Elderly Patients Presenting to the Emergency Department with Syncope

Grossman SA, Van Epp SA, Arnold RC, Moore RB, Lee LC, Shapiro NI, Parker RA, Wolf RE, and Lipsitz LA.

Background: Most patients admitted to the hospital from the emergency department with syncope do not have myocardial infarction yet routine current practice is to draw serial cardiac enzymes.

Objective: To assess the value of serial cardiac enzymes in elderly patients who present to the ED with syncope.

Methods: A retrospective chart review was performed on consecutive patients age 65 and over presenting with syncope to a teaching hospital ED between 7/1/98 and 6/30/99. Charts were screened for presenting history, cardiac risk factors and outcomes including acute coronary syndromes, myocardial infarction and death. Patients returning to the ED or admitted as an inpatient within 72 hours of discharge were recorded as well.

Results: Of 497 visits, 327 patients met the study criteria, with 99% of charts available for review. 212 patients (65%) had CPK drawn and 12% had Troponin I (TnI) as well. Two patients, 0.94%, (95% confidence interval: 0.01%-3.36%) had positive cardiac enzymes during their hospitalization. CPK was positive in both and TnI, drawn in one patient, was also positive. One of these patients had chest discomfort in addition to a syncopal event. The other patient had dementia and could not recall the details surrounding her syncopal event. In addition, her baseline EKG demonstrated a LBBB, limiting the interpretation of the EKG.

Conclusions: Cardiac enzymes may be of little additional value if drawn routinely on elderly patients who are admitted to the hospital from the emergency department with syncope, unless they have other signs or symptoms suggestive of myocardial ischemia by history such as chest pain or dyspnea, or by EKG, i.e. new STTW abnormalities, ST elevation, or an EKG that is uninterpretable for ischemia.

Exponential Rise in Resource Utilization in the Emergency Department as the Length of Visit Increases

Shneiderman A, Christianson J, Hardin E

Background: Our institution has limited telemetry, stepdown and ICU bed capacity. Patients are commonly monitored in the ED for prolonged periods until a bed of proper acuity is available. There are approximately 45,000 visits per year in the main ED and another 35,000 in the Urgent Care Clinic. **Objective:** Assess gurney occupancy time relative to the length of stay (LOS) in the ED.

Methods: LOS was calculated from our patient tracking system for 21,688 patients that were seen in the main ED during the first 6 months of 2001. We subsequently divided the patients into 5 groups: Group 1 had an ED visit of 6 hours (hrs) or less. Group 2 had a stay of 6-12 hrs, Group 3 stayed 12-24 hrs, Group 4 stayed between 24-48 hrs, and Group 5 stayed > 48 hrs. The percentage of patients in each of the groups was calculated for each month separately, and subsequently averaged over the 6 months. The midpoint of length of stay for each category was multiplied by the percentage of patients in each category for the first 6 months of 2001. The product was termed "Standardized Gurney Hours". This number was normalized to obtain "Standardized Gurney Occupancy" (SGO).

Results: 52% of patient visits were placed into Group 1, and accounted for 17% of the SGO. Group 2 represented 28% of the patients, resulting in 28% of the SGO. Group 3 corresponded to 14% of patients and 29% of the SGO. Group 4 was 5% of the patients and represented 19% of the SGO, and Group 5 was 1% of the patients and represented 7% of the SGO. When Groups 4 and 5 were combined (i.e., patient stay > 24 hrs), they represented 6% of the patients with 26% of the Standardized Gurney Occupancy.

Conclusion: As the ED visit becomes prolonged, the SGO increases exponentially. Those patients that leave the department in less than 6 hrs comprised more than half of the ED visits, and utilized only 17% of the SGO. By comparison, patients who stayed more than 24 hr were 6% of the patients and utilized over 25% of the SGO. This underscores the need of a hospital to have facilities in place to expediently transfer patients out of the ED to the floor or ICU.