

8:45

IS AGE AN INDEPENDENT PREDICTOR OF MORTALITY IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION?

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Advanced age is associated with increased mortality following acute MI (AMI), but the importance of age as an independent correlate of mortality after careful statistical adjustment for significant baseline and therapeutic differences has not been adequately assessed. We therefore prospectively evaluated 261 consecutive pts admitted to the CCU over a 12-month period who fulfilled strict criteria for a diagnosis of AMI. Mean age was 69.1 ± 11.8 yrs (range: 33-92 yrs); 55.2% were male. Hospital mortality was 11.1% overall, 5.6% in pts < 70 yrs (N=124), and 16.1% in pts > 70 yrs (N=137; $p=.013$). Other significant ($p < .05$) differences between older and younger pts included: female gender, NYHA and Killip classes, angina history, creatinine, BUN, presence of AV block or LVH on admission ECG (all higher in elderly pts), and serum albumin, peak CK level, and use of thrombolytic therapy and intravenous beta blockade (all lower in elderly pts). After adjusting for these and other prognostic variables, including MI site and type (Q-wave vs. non-Q-wave), stepwise and multiple linear regression models selected age ($p=.001$), peak CK level ($p=.002$), systolic BP on admission (negative correlation, $p=.002$), and Killip class ($p=.003$) as independent predictors of hospital mortality. Collection of 1-year followup data is in progress and these results will also be presented.

CONCLUSION: Even after adjusting for important baseline and therapeutic differences, age remains the strongest independent predictor of early mortality in pts with AMI.

9:00

SURVIVAL AFTER ACUTE MYOCARDIAL INFARCTION IN PATIENTS 70 YEARS AND OLDER

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The last decade has been associated with a significant decline in case-fatality rates of younger patients (pts.) hospitalized for treatment of acute myocardial infarction (MI). To examine whether pts. aged 70 and older shared this same experience, we abstracted the records of all Olmsted County pts. aged 70 and older who were hospitalized at Mayo Clinic hospitals for acute MI and treated in the coronary care unit in 1976-78 (n = 57) and 1987-89 (n = 190).

In the later period, pts. were more likely to have been treated with aspirin (2% vs 49%, $p < .001$), heparin (6% vs 69%, $p < .001$), beta blockers (11% vs 35%, $p = .005$), coronary arteriography (2% vs 51%, $p < .001$), balloon dilatation (0% vs 24%, $p < .001$), and bypass surgery (0% vs 11%, $p = .006$). Thrombolytics were used rarely in both groups (0% vs 6%).

Survival rates to discharge from the CCU were only slightly better in the 1980s compared to the 1970s (75% vs 65%, $p = ns$). Probability of survival at one and two years was also similar between the earlier and later periods being 54% vs 61% at one year and 46% vs 53% at two years.

Increasing intensity of therapy for acute MI in the elderly is associated with only marginal increases in short-term survival and did not increase long-term survival in this population.

9:15

THE IMPACT OF AGE ON LEFT VENTRICULAR DIASTOLIC FUNCTION IN HEALTHY SUBJECTS FROM THE FRAMINGHAM HEART STUDY

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It is controversial whether age-related alterations in left ventricular (LV) diastolic function (DF) are independent of changes in heart rate, blood pressure, obesity, LV systolic function and LV geometry. These variables may affect DF and they also vary with age. To address this question we examined transmitral Doppler indices of DF in 127 randomly selected normal subjects from the Framingham Study evenly distributed by age across the third through eighth decades. Univariate linear regression showed a strong inverse correlation between age and indices of DF including peak velocity E/A (P-E/A) and time velocity integral E/A (TVI-E/A) ($p < .0001$). The inverse correlations between DF and age remained after multivariate adjustment for heart rate, blood pressure, body mass index, PR interval, fractional shortening, LV wall thickness and internal diameter ($p < .0001$).

Correlation coefficients for age versus DF

	MEN		WOMEN	
	Univariate	Multivariate	Univariate	Multivariate
P-E/A	-0.79	-0.66	-0.81	-0.69
TVI-E/A	-0.73	-0.59	-0.77	-0.69

Age-related changes in DF occur in both sexes and persist after adjusting clinical and echocardiographic variables which change with age. These findings suggest that aging promotes alterations in myocardial distensibility which are unexplained by age-related changes in cardiac physiology, structure and function.

9:30

AUTOMATIC IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR IN THE ELDERLY

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The automatic implantable cardioverter-defibrillator (AICD) is effective in patients at high risk for sudden cardiac death (SCD). No previous study has reported its specific use in the elderly. We compared the consecutive AICD experience of 20 elderly patients (age ≥ 70 yrs) (Group I) to 30 young patients ($\geq 45 < 60$ yrs) (Group II). Group I consisted of 17 males, mean age 76 (70-86); coronary disease 17, cardiomyopathy 3; mean ejection fraction 35%. Compared to Group II baseline clinical variables other than age were similar. **RESULTS:** Prior to implant, Group I had failed greater drugs (mean 4.6 vs 3.3), had more programmed stimulation (PS) trials (mean 4.6 vs 1.7), had longer hospital stay (mean 34 vs 22 days), and longer time from first PS to implant (mean 18 vs 13 days) (all $p < .05$). Four of 20 (20%) Group I patients vs none of Group II required concomitant pacemaker. There were no significant differences in operative mortality or complications, or post-operative intensive care or progressive care days. Readmissions for arrhythmic events occurred in 47% Group I vs 55% Group II ($p=ns$). Appropriate AICD discharges occurred in 35% Group I patients and 37% Group II patients ($p=ns$). There was 1 SCD (6%) in Group I and 2 SCD (7%) in Group II at 1-3 years followup. **CONCLUSION:** Elderly patients undergoing AICD implantation had longer hospitalization due to pre-implant PS drug trials and required greater need for concomitant pacemaker compared to younger population; operative risk and AICD efficacy appears comparable.