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Age-related hospitalization and mortality rates for acute myocardial infarction: The 1969-82 vs. the 1990-94 period

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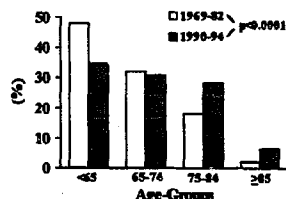
(Article begins on next page)

9:15

775-4 Age-Related Hospitalization and Mortality Rates for Acute Myocardial Infarction: The 1969–82 vs. the 1990–94 Period

Stefano Fumagalli, Lorenzo Boncinelli, Lorenza Magherini, Mauro Di Bari, Nicolò Marchionni. *Intensive Care Unit, Institute of Gerontology, University of Florence, Florence, Italy*

To evaluate how the population aging process influences the incidence and prognosis of acute myocardial infarction (AMI) we compared the age-related hospitalization and mortality rates observed in our Intensive Care Unit (ICU) in the 1969–82 period (2056 patients, pts) with that of the 1990–94 period (546 pts). Pts were divided into four age-groups — A: < 65, B: 65–74, C: 75–84 and D: ≥ 85. In the 1990–94 period hospitalization rates significantly increased in older groups ($p < 0.0001$, Figure) while mortality decreased in all groups, the reduction being significant for pts aged 65–74 and 75–84 (A: from 12.0 to 8.0% — OR: 0.63, CI: 0.36–1.11, NS; B: from 35.0 to 10.7% — OR: 0.22, CI: 0.13–0.37, $p < 0.0001$; C: from 42.0 to 25.2% — OR: 0.46, CI: 0.31–0.71, $p = 0.0003$; D: from 50.0 to 31.4% — OR: 0.46, CI: 0.18–1.15, NS). In the 1990–94 pts age remained a strong prognostic factor, the relative risk (RR) of mortality growing from 1.38 (B vs. A, NS) to 3.88 (C vs. A, $p < 0.0001$) and finally to 5.29 (D vs. A, $p < 0.0001$). Due to the absence of age-limited treatment criteria, we built a logistic regression model to verify the influence of the most important clinical factors on prognosis. Age (RR = 1.57, $p = 0.014$), pre-existing left ventricular failure (RR = 6.69, $p < 0.0001$), the need for mechanical ventilation (RR = 8.78, $p < 0.0001$) and total parenteral nutrition (RR = 5.86, $p = 0.004$) were associated with in-hospital death. In conclusion, despite the great reduction in mortality observed in elderly pts, age still represents a negative prognostic factor.



The growing incidence of AMI in aged pts compel us to a more and more intensive treatment, so to reduce mortality and post-myocardial infarction disability.

9:30

775-5 Mitral Valve Repair in the Elderly

Evelyn M. Lee, Joanne Porter, Francis C. Wells, Leonard M. Shapiro. *Regional Cardiac Unit, Papworth Hospital, Cambridge, U.K.*

We performed a retrospective study of 254 consecutive patients who underwent mitral valve repair, 80 of whom were elderly (over 70 years old) at operation. The elderly group contained significantly (chi-square test, $p < 0.05$) more patients with degenerative valve disease (79.7% vs 59.2%) and fewer with rheumatic valve disease (5.1% vs 17.2%) and severe ischaemic heart disease (32.5% vs 19.0%) than the younger group, and were also more unwell pre-operatively (85.0% vs 67.2% in NYHA class III or IV heart failure). There were no significant differences in sex, heart rhythm, severe aortic valve disease, left ventricular ejection fraction, and mitral regurgitation or stenosis. Mean ages in the elderly and younger groups were 74.2 ± 2.7 and 59.4 ± 9.9 years respectively. Mean follow-up was 33.6 ± 26.7 and 43.4 ± 29.0 months respectively. Five-year complications rates are expressed as value ± 1 standard error. Thirty-day mortality in the elderly and younger groups was 10% vs 12.6% ($p > 0.05$) respectively. Five-year mortality was $42.3 \pm 10.5\%$ vs $12.1 \pm 3.4\%$ ($p = 0.01$) for all complications-related deaths (including myocardial failure), $26.9 \pm 10.7\%$ vs $7.7 \pm 3.1\%$ ($p = 0.005$) for deaths due to myocardial failure, $9.6 \pm 6.0\%$ vs $3.7 \pm 1.7\%$ ($p = 0.8$) for complications-related deaths not due to myocardial failure respectively. Five-year complication rates were $52.1 \pm 9.5\%$ vs $29.2 \pm 5.7\%$ for myocardial failure ($p = 0.1$), $2.7 \pm 1.9\%$ vs $7.6 \pm 2.3\%$ ($p = 0.3$) for mitral valve failure, $21.8 \pm 7.3\%$ vs $12.4 \pm 3.5\%$ ($p = 0.09$) for systemic thromboembolism, $5.4 \pm 2.7\%$ vs $4.0 \pm 1.6\%$ ($p = 0.4$) for anticoagulation-related hemorrhage and $3.4 \pm 2.6\%$ vs $1.9 \pm 1.1\%$ ($p = 0.7$) for endocarditis. Age > 70 years ($p = 0.007$), left ventricular ejection fraction $< 40\%$ ($p = 0.008$) and probably NYHA class III or IV heart failure ($p = 0.06$) were independent predictors of complications-related and myocardial failure-related death on Cox regression analysis.

Thus, the results of mitral valve repair in the elderly are comparable to those in younger patients, except for myocardial failure. The elderly may underestimate symptoms, tolerate myocardial failure less well, present later

or be referred for surgery later. As with younger patients, surgery should not be delayed until severe symptoms manifest in otherwise fit elderly patients.

9:45

775-6 Prevalence and Determinants of Definite, Non-Q-Wave and Silent Myocardial Infarction in Older Adults: The Rotterdam Study

Martine C. de Bruyne, Arend Mosterd, Arno W. Hoes, Jan A. Kors, Diederick E. Grobbee. *Erasmus University Medical School, Rotterdam, NL*

Myocardial infarction (MI) may occur with or without symptoms of cardiac distress and with or without electrocardiographic (ECG) evidence. Still, all of these manifestations of MI confer an increased risk for future cardiac disease. In this study we assessed the prevalence of different types of MI and their association with cardiovascular risk factors.

The study population formed part of the Rotterdam Study and consisted of 3272 men and women aged 55 years or older. Self-reported MI with ECG evidence was defined as *definite MI*. Self-reported MI without ECG evidence, but verified with additional information from a general practitioner or cardiologist, was defined as *non-Q-wave MI*. Finally, not self-reported MI with ECG-evidence was defined as *silent MI*, after verification of the absence of symptoms using information of the general practitioner or cardiologist. Multivariate logistic regression analysis was used to identify determinants of non-Q-wave MI and silent MI in comparison with definite MI, adjusting for age and gender.

Prevalence of the three types of MI ($n = 343$) are presented in Table 1. Overall, 26% of all MIs occurred without ECG evidence and 36% of all MIs occurred silent. Non-Q-wave MI was associated, although not significantly, with a higher body-mass index (OR 1.08, 95% CI: 0.99–1.18). Silent MI was more frequent in women (OR 2.45; 95% CI: 1.46–4.10), in hypertension (OR 2.59; 95% CI: 1.03–4.94), among cigarette smokers (OR 1.93; 95% CI: 1.06–3.53) and in those with higher blood glucose level after a non-fasting glucose tolerance test (OR 1.1 per mmol/l; 95% CI: 1.00–1.22). A history of angina pectoris was associated with lower frequency of silent MI (OR 0.23; 95% CI: 0.10–0.57). We conclude that MIs in the elderly occur frequently without typical symptoms or ECG changes. As the group is at increased risk of symptomatic heart disease or death, it requires further attention.

Table 1. Prevalence of MI (%)

	Age categories		
	55–64	65–74	> 75
Definite MI	2.6	5.0	4.8
men	4.6	8.9	8.6
women	1.1	2.2	3.0
Non-Q-wave MI	1.7	3.3	4.3
men	3.3	5.4	2.8
women	0.6	1.8	6.2
Silent MI	2.3	3.5	6.2
men	2.6	5.0	6.6
women	2.0	2.5	6.0

776 Post-Transplant Coronary Disease

Wednesday, March 27, 1996, 8:30 a.m.–10:00 a.m.
Orange County Convention Center, Room 230B

8:30

776-1 The Distribution and Characteristics of Transplant Coronary Disease in a Prospective Morphometric Analysis of Intracoronary Ultrasound

Jay A. Johnson, Jon A. Kobashigawa, Lawrence Yeatman, Jeffrey G. Carr, Kevin D. Trosian, Alejandro Sabad, Lianne S. Wener, Davis Drinkwater, Hillel Laks. *University of California, Los Angeles, California*

Intracoronary ultrasound (ICUS) is the most sensitive technique to evaluate transplant coronary disease (TCAD) which is a major cause of long-term morbidity and mortality after heart transplantation. Previous ICUS studies have characterized TCAD based on analysis of few coronary artery sites (≤ 3 sites/patient). Quantitative morphometric analysis (use of 6–10 random coronary artery sites/patient) of ICUS has been reported to most accurately evaluate TCAD severity. We prospectively studied 47 heart transplant patients with ICUS (2.9 F or 4.3 F, 30 Mhz) and morphometric analysis at baseline (6–8 weeks) and 1 year post transplant to: (1) evaluate the distribution of TCAD with respect to proximal versus distal disease and TCAD at branch vessels versus between branch vessels and (2) determine if there is compensatory dilation of the coronary arteries with TCAD. ICUS measure-