Literature Review

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Cardiology


A predischarge exercise test was performed by 70 patients 7 ± 4 days (mean ± SD) after acute myocardial infarction (to determine the short and long term prognostic value of predischarge exercise stress echocardiography (Ex-Echo) compared with exercise stress electrocardiography (Ex-ECG). Two-dimensional echocardiograms were obtained at rest and immediately after exercise; a wall motion score index was obtained both at rest and immediately after exercise. Results of the Ex-Echo were positive in 27 patients (39%), whereas those of Ex-ECG were positive in 34 (49%). The wall motion index after exercise was lower in patients who died during follow-up (85 vs 98, p = 0.01) and in those with cardiac events, defined as death, nonfatal reinfarction or revascularization (88 vs 98, p = 0.005). More patients with a positive Ex-Echo result had short-term cardiac events (within 2 weeks) than patients with a negative Ex-Echo (6 [22%] vs 2 [5%]; p = 0.04). The same was true for long-term mortality (12 [44%] vs 3 [7%]; p = 0.0002), reinfarctions (10 [37%] vs 4 [9%]; p = 0.01), revascularization procedures (11 [41%] vs 7 [16%]; p = 0.023), and cardiac events (22 [81%] vs 12 [28%]; p < 0.0001). Survival time was shorter in patients with positive compared with negative Ex-Echo results (34% difference between groups). The same applied for cumulative survival free from cardiac events (43%, p = 0.001).

In a multivariate regression analysis, both Ex-Echo and Ex-ECG independently predicted death, death or nonfatal reinfarction, revascularization and cardiac events. A new-onset wall motion abnormality was, however, the strongest variable predicting death and deaths or nonfatal reinfarction. Thus, Ex-Echo is recommended for early risk stratification after

Cardiology


Coronary-artery stents are known to reduce rates of restenosis after coronary angioplasty, but it is uncertain how long this benefit is maintained. The authors evaluated clinical and angiographic follow-up information for up to three years after the implantation of Palmaz-Schatz metallic coronary-artery stents in 143 patients with 147 lesions of native coronary arteries. The rate of survival free of myocardial infarction, bypass surgery, and repeated coronary angioplasty for stented lesions was 74.6 percent at three years. After 14 months, revascularization of the stented lesion was necessary in only three patients (2.1 percent). In contrast, coronary angioplasty for a new lesion was required in 11 patients (7.7 percent). Follow-up coronary angiography of 137 lesions at six months, 114 lesions at one year, and 72 lesions at three years revealed a decrease in minimal luminal diameter from 2.54 ± 0.44 mm immediately after stent implantation to 1.87 ± 0.56 mm at six months, but no further decrease in diameter at one year (in patients with paired angiograms, 1.95 ± 0.49 mm at both six months and one year). Significant late improvement in luminal diameter was observed at three years (in patients with paired angiograms, 1.94 ± 0.48 mm at six months and 2.09 ± 0.48 mm at three years; P<0.001).

Clinical and angiographic outcomes up to three years after coronary-artery stenting were favorable, with a low rate of revascularization of the stented lesions. Late improvement in luminal diameter appears to occur between six months and three years.
Cardiology


Whether higher operator case volume is associated with improved percutaneous transluminal coronary angioplasty (PTCA) clinical and cost outcomes is the subject of this study. Hospital volume-related improvement in clinical outcomes has been shown for coronary artery bypass grafting (CABG) and PTCA. Physician case volume-related differences in clinical outcomes have not been clearly demonstrated, and differences in hospital costs have not been examined. For clinical and cost outcomes, risk-adjusted analysis of differences in PTCA outcomes has not been reported. In addition, controversy exists about the appropriate annual case volume considered adequate to maintain skills and achieve optimal clinical outcomes in performing PTCA procedures. The authors studied 2,350 PTCA performed between March 1, 1991, and February 28, 1994. Physicians were divided into 2 volume groups: high (> 50 cases/year and low(<50 cases/year). The rate of emergency CABG after PTCA was 2.1% for high and 3.9% for low-volume operators (p = 0.009). Hospital morbidity associated with PTCA was lower in high than in low-volume operators (6.45% vs 10.13%, p <0.001). The risk-adjusted ratios for emergency CABG and morbidity were 2.05 (p = 0.005) and 1.79 (p <0.001), respectively. The length of stay averaged 4.07 ± 4.33 days for low-volume operators (p = 0.003). Hospital costs averaged $7,977 ± $7,269 for high and $8,278 ± $6,289 for low-volume operators (p = 0.068). The risk-adjusted ratio was 1.091 (p = 0.004) for length of stay and 1.050 (p = 0.029) for cost. Thus, PTCA performed by high-volume operators is significantly less likely to require emergency CABG and is also significantly associated with lower hospital morbidity, shorter hospital length of stay, and lower hospital costs.

Cardiology


The frequency of complications in patients with cocaine-associated myocardial infarction is unknown. This study was performed to determine the short-term morbidity and mortality secondary to cocaine-associated myocardial infarction. The authors performed a retrospective cohort study at 29 hospital centers throughout the United States. Patients with cocaine-associated myocardial infarction that occurred between 1987 and 1993 were identified through record review. The primary outcome measures were in-hospital mortality and the incidence and timing of major cardiovascular complications.

Cocaine-associated myocardial infarction was identified 136 times in 130 patients. Patients were generally young (mean age 38 years), nonwhite (72%), tobacco smokers (91%) with a history of cocaine use in past 24 hours (88%). The initial electrocardiogram disclosed infarction in 44% and ischemia in an additional 18% of patients. Myocardial infarctions were evenly distributed between anterior (45%) and inferior (44%) and were most often non-Q-wave (61%). Complications occurred 64 times in 49 patients (36%), including congestive heart failure in nine patients, ventricular tachycardia in 23 patients, supraventricular tachycardia in six patients, and bradydysrhythmias in 26 patients. Most patients who had complications (90%) had them within 12 hours of presentation. Acute in-hospital mortality was 0%.

The mortality of patients hospitalized with cocaine-associated myocardial infarction was low. The majority of complications occurred within 12 hours of presentation.

Cardiology


The independent predictive role of ventricular premature complex (VPC) frequency in the stratification of mortality risk after acute myocardial infarction (AMI) was established in the prethrombolytic era by extensive multicenter trials. Thrombolysis has lead to important changes in the natural history of patients after AMI, so that reassessment of established risk factors is now required. The prognostic significance of VPCs was assessed in 680 patients, of whom 379 received early thrombolytic therapy. All patients underwent 24-hour Holter monitoring in a drug-free state between 6 and 10 days after AMI. Patients were followed up for 1 to 8 years. During the first year of follow-up, cardiac death occurred in 33 patients, sudden death in 24, and sustained ventricular tachycardia in 20. Mean VPC frequency was significantly higher in patients who died of cardiac causes, in those who died.
suddenly, and in those with arrhythmia events during the first year of follow-up. This was also true when patients who did and did not undergo thrombolysis were considered separately. The positive predictive accuracy of VPC frequency in predicting adverse cardiac events was greater in patients who did than did not undergo thrombolysis. At a sensitivity level of 40%, the positive predictive accuracy for cardiac mortality and arrhythmic events for the group with thrombolysis was 19.4% and 25.8%, respectively, compared with 16% and 16% for those without thrombolysis. Moreover, the highest SPC frequency for the dichotomy of patients into high and low-risk groups was 25 VPCs/hour after thrombolysis, but 10 VPCs/hour for patients without thrombolysis. VPC frequency appears to be more highly predictive of prognosis after AMI in patients who have undergone thrombolysis than in those who have not, but the optimal frequency for dichotomy is higher in the former.

**Epidemiology**


Whereas a variety of epidemiological studies have examined factors associated with overall and cause-specific morbidity and mortality limited data exist about factors associated with longevity, particularly in middle-aged men and women. The present study examined factors associated with survival to 75 years of age in middle-aged men and women from the community-based Framingham Study.

After excluding persons with cancers cardiovascular disease or diabetes, 747 men and 973 women from the Framingham Study, who were 50 years of age at the time of a routine clinical examination and who could potentially reach 75 years of age during follow-up, were studied. Logistic regression modeling was used to examine factors associated with survival to 75 years of age.

Fewer cigarettes smoked per days lower systolic blood pressure, and higher forced vital capacity were associated with longevity in both sexes. Lower heart rate in men and parental survival to 75 years of age in women were additionally associated with survival to 75 years of age. The results of this long-term, prospective study suggest a number of lifestyle characteristics and one familial factor associated with increased life expectancy. These data lend further support to the positive impact on life expectancy of health promotional efforts directed at smoking cessation and control of hypertension in middle-aged men and women.

**Hematology**


The objective was to determine the incidence and timing of relapses in patients who have recovered from an acute episode of thrombotic thrombocytopenic purpura.

63 of 72 surviving patients who had participated in a randomized study that compared plasma exchange and plasma infusion as treatments for thrombotic thrombocytopenic purpura and for whom continued clinical follow-up was obtained were studied. Recurrence of thrombotic thrombocytopenic purpura as defined by a decrease in platelet count to less than 100 X 10^9/L and by the onset of microangiopathic hemolytic anemia as identified by erythrocyte fragmentation in a peripheral blood film was used as an outcome measure. 37 of the 63 patients have not had recurrence of thrombotic thrombocytopenic purpura and have remained completely well; 6 patients have not had recurrence but have developed other medical problems; 3 patients have not had recurrence but have residual neurologic defects from the original episode; and 17 patients have had one or more recurrences, occurring 7 months to 8 years after the original episode. As determined by Kaplan-Meier analysis, the projected recurrence rate after 10 years in all surviving patients is 36%.

The authors found that more than one third of patients who survive an acute episode of thrombotic thrombocytopenic purpura will have at least one relapse during the following 10 years.

**Neurology**


Older people frequently have signs of parkinsonism, but information about the prevalence of parkinsonism and mortality among those with the condition in the community is limited.

A stratified random sample of 467 residents of East Boston, Massachusetts, 65 years of age or older, were given structured neurologic examinations. Using uniform, specified combinations of parkinsonian signs, the authors estimated the prevalence of four categories of signs - bradykinesia, gait disturbance, rigidity, and
tremor - and of parkinsonism, defined as the presence of two or more categories. They did not study Parkinson’s disease because it could be distinguished from other conditions that can cause parkinsonism. Proportional-hazards models were used to compare the risk of death among people with and those without parkinsonism.

One hundred fifty-nine persons had parkinsonism, 301 did not, and 7 could not be classified. The overall prevalence estimates were 14.9 percent for people 65 to 74 years of age, 29.5 percent for those 75 to 84, and 52.4 percent for those 85 and older. With a mean follow-up period of 9.2 years, 124 persons with parkinsonism (78 percent) and 146 persons without it (49 percent) died. Adjusted for age and sex, the overall risk of death among people with parkinsonism was 2.0 times that among people without it. Among people with parkinsonism, the presence of gait disturbance was associated with an increased risk of death.

Parkinsonism is very common among people over the age of 65, and its prevalence increased markedly with age. Parkinsonism is associated with a twofold increase in the risk of death) which is strongly related to the presence of a gait disturbance.

Oncology


The adenoma-adenocarcinoma sequence in colorectal cancer suggests an increased risk of colorectal cancer in the families of patients with adenomatous polyps.

A random sample of participants in the National Polyp Study who had newly diagnosed adenomatous polyps were interviewed for information on the history of colorectal cancer in their parents and siblings. The risk of colorectal cancer in family members was analyzed according to the characteristics of the patients with adenomas and in comparison with a sample of patients’ spouses, who served as controls.

Among the patients with adenomas, 1199 provided information on whether they had a family history of colorectal cancer. After the exclusion of families for which information was incomplete and of 48 patients who had been referred for colonoscopy solely because they had a family history of colorectal cancer, there were 103 patients with adenomas. 1865 parents 2381 siblings, and 1411 spouse controls. The relative risk of colorectal cancer, adjusted for the year of birth and sex, was 1.78 for the parents and siblings of the patients with adenomas as compared with the spouse controls. The relative risk for siblings of patients in whom adenomas were diagnosed before 60 years of age was 2.59, as compared with the siblings of patients who were 60 or older at the time of diagnosis and after adjustment for the sibling’s year of birth and sex and a parental history of colorectal cancer. The risk increased with decreasing age at the time of the diagnosis of adenoma (P for trend <0.001). The relative risk for the siblings of patients who had a parent with colorectal cancer, as compared with those who had no parent with cancer, was 3.25, after adjustment for the sibling’s year of birth and sex and the patient’s age at diagnosis.

Siblings and parents of patients with adenomatous polyps are at increased risk for colorectal cancer, particularly when the adenoma is diagnosed before the age of 60 or - in the case of siblings - when a parent has had colorectal cancer.

Oncology


The objective was to determine the effectiveness of follow-up tests for signaling recurrences in patients with intermediate and high-risk malignant melanomas treated with curative intention. A total of 261 patients with resected local (≤6.9mm) and regional nodal malignant melanomas who were enrolled in a single prospective adjuvant trial were studied. All patients were scheduled to be followed up monthly for 2 months, then every 2 months for the first year, every 4 months the second year, every 6 months the next 3 years, and annually thereafter, with each visit consisting of a history, physical examination, complete blood cell count, blood chemistry panel, and a chest x-ray.

Of the 145 evaluable patients who developed recurrent melanomas, 99 patients (68%) developed symptoms that signaled the diagnosis of recurrent disease. Physical examination of asymptomatic patients led to the diagnosis of recurrent disease in 37 patients (26%). The other nine patients (6%) with recurrent disease had abnormal chest x-rays. Laboratory results were never a sole indicator of recurrent disease.

The majority of recurrences following resection of primary melanomas are discovered by history and/or physical examination despite the frequent use of other follow-up tests. The present data indicate that routine blood analyses and chest x-rays have limited value in the postoperative follow-up of patients with resected intermediate and high-risk melanomas.