

Review of the Journals

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Cardiology


Of the 771 candidates for a 12-hour period of observation who did not have enzyme abnormalities or recurrent pain during the first 12 hours, 4 (0.5%) were subsequently found to have acute myocardial infarction, and only 3 (0.4%) died after primary cardiac arrests, all of which occurred three to five days after admission. Rates of other major cardiovascular complications were low in the patients who might have been transferred from the coronary care unit after 12 hours with this strategy. In patients with a higher initial risk of infarction, the standard strategy of 24-hour observation identified all but 11 of 739 acute myocardial infarctions (1%).

The authors conclude emergency room clinical data can be used to identify a large subgroup of patients for whom a 12-hour period of observation is normally sufficient to exclude acute myocardial infarction. Patient-specific evaluation and treatment can then proceed without the restrictions imposed by “rule-out” protocols for myocardial infarction.


The relation between the presence of calcified plaques in the thoracic aorta, as detected on chest x-rays, and the development of cardiovascular disease is examined during 12 years of follow-up of the Framingham cohort (n = 5,209). The prevalence of aortic calcified plaques approximately doubled with each decade of age, with only a trivial male predominance. Its presence was associated with a twofold increase in risk of cardiovascular death in men and women younger than age 65, even after other risk factors were taken into account. Similar increases in risk were found for coronary artery disease, stroke, and intermittent claudication among middle-aged women. In middle-age men these risks were less marked. The predictive value of aortic calcified plaques generally diminished with age. Risk of sudden coronary death in men with calcified plaques in the thoracic aorta ranged from a sevenfold increase at age 35 years to no excess risk at age 70 years. These results support the view that atherosclerosis is a generalized process. The finding of aortic calcified plaques in a relatively young subject on a routine chest x-ray should be regarded as a sign for potential development of clinically manifest atherosclerotic disease in the cardiac, cerebral, and peripheral arterial circulation.


To determine the effect of left ventricular (LV) aneurysm on the risk of late sudden and nonsudden cardiac death, the authors studied 121 patients with healed myocardial infarction (MI) [55 manifesting akinesis on ventriculography (MI group) and 66 with diastolic deformity (eccentricity) and systolic dyskinesia (LV aneurysm group)] over a 5.7-year interval. Ventricular ectopy was quantitated by 24-hour Holter monitoring. For all patients, ejection fraction was the best predictor of total cardiac death (p < 0.005), and LV aneurysm the best predictor of sudden cardiac death (p < 0.05). In the LV aneurysm group, total cardiac death was predicted by decreasing ejection fraction (p < 0.05), ventricular tachycardia (p < 0.01), and right coronary disease (p < 0.1). Ventricular tachycardia was the sole predictor of sudden cardiac death (p < 0.05). Risk of late sudden cardiac death is small after uncomplicated MI, but significant in the presence of aneurysm.


The progress of coronary artery stenosis to total occlusion was assessed in 413 hyperlipidemic patients with a previous myocardial infarction. Coronary angiograms were recorded at baseline, 3 (n = 312), and 5 years (n = 248) after initial study and analyzed by two independent readers. There were 177 (43%) patients with 1-, 130 (31%) with 2-, and 61 (15%) with 3-vessel disease (≥50% diameter narrowing), whereas 45 (11%) did not have significant disease within a major coronary vessel at baseline. A new finding of total occlusion occurred in 4% (30 of 748) and 7% (40 of 605) of major coronary artery segments at 3 and 5 years, respectively. The risk of progression to total occlusion was higher if the initial stenosis was >60% compared to lesions ≤60% both at 3 years (19 of 143 = 13% vs 11 of 605 = 2%; p < 0.001) and 5 years (27 of 91 = 30% vs 13 of 514 = 3%; p < 0.001). The frequency of occlusion was highest for the right coronary artery by 5 years (18 of 167 = 11% for right vs 8 of 225 = 4% for circumflex vs 14 of 213 = 7% for left anterior descending coronary arteries; p < 0.02). Clinical and laboratory data revealed that myocardial infarction was associated with a new total occlusion in 23% of patients (7 of 30) at 3 years and in 64% (25 of 39) at 5 years.

Serum cholesterol and triglyceride levels were significantly higher in patients with a new finding of total occlusion at 5 years. This prospective serial angiographic study showed that the extent of initial coronary artery narrowing was significantly associated with the risk of progression to total occlusion.
CARDIOLOGY/METABOLISM


Lipoprotein (a) [Lp(a)] is composed of 1 low-density lipoprotein particle to which 1 molecule of apolipoprotein (a) is covalently linked. Plasma levels of Lp(a) were determined in 180 patients (150 men and 30 women) with angiographically documented coronary artery disease (CAD) and in 459 control subjects (276 men and 183 women); the prevalence of familial Lp(a) excess was also assessed in the families of 102 patients with CAD. Patients with CAD had higher Lp(a) levels than control subjects (19 ± 21 vs. 13 ± 15 mg/dl, p < 0.001). The prevalence of Lp(a) excess was 17% in patients with CAD (p < 0.05). Stepwise discriminant analysis revealed that Lp(a) was an independent risk factor for the presence of CAD in men. Family studies revealed that Lp(a) levels are strongly genetically determined. Spearman rank correlations for Lp(a) levels between proband-spouse (r = -0.004, p = 0.0948) and midparent-midoffspring (r=0.380, p = 0.001) indicate that Lp(a) levels are largely genetically determined. The authors’ data suggest that Lp(a) is a common genetic disorder in patients with premature CAD and that it is highly heritable. In addition, Lp(a) levels are independent of other lipoprotein parameters.

GASTROENTEROLOGY


Hepatitis C virus infection is unlikely to be important in the etiology or pathogenesis of autoimmune chronic active hepatitis and other poorly understood chronic liver diseases, conclude the authors of this study from Australia. Among those patients who have autoimmune chronic active hepatitis, primary biliary cirrhosis, primary sclerosing cholangitis, non-alcoholic steatohepatitis, alcoholic hepatitis, and cryptogenic cirrhosis, only 18 of 140 cases (13%) tested positive for serum antibodies to the virus (anti-HCV). In contrast, 45 of 51 (88%) patients diagnosed as having chronic non-A, non-B hepatitis were anti-HCV-seropositive. Although HCV infection may account for some portion of cases of cryptogenic cirrhosis, chronic liver diseases of presumed autoimmune or metabolic etiology do not appear to be linked to HCV.

GERIATRICS


Elderly people with Type II (non-insulin dependent) diabetes mellitus appear to have greater impairment of cognitive function than do nondiabetics, say the authors of this study from the Oregon Health Sciences University in Portland. A battery of 13 tests was used to assess cognitive function in 45 persons aged 65 to 77 years. They were categorized as either known diabetics (19 patients), previously unrecognized hyperglycemic patients who were found to have elevated glycosylated hemoglobin levels (7), and normal controls (19). The performance of the diabetic patients was significantly lower than that of the controls in 7 of the 13 tests, as well as in a multiple choice vocabulary test. Scores of the unrecognized hyperglycemic patients fell midway between those of the other two groups in 5 of these same 7 tests. The authors conclude that because approximately 20% of Americans over age 65 have diabetes, mental impairment from this disease may contribute significantly to the deterioration of function that often occurs in older age.
Neurology


This study is a prospective analysis of the predictive value of diffuse and localized carotid bruit. Patients with asymptomatic carotid bruits are compared with a population-based control group matched for age and sex known not to have carotid bruit. Comparisons were made for subsequent transient ischemic attack, stroke, and death. Each person was followed up until death or for 5 years. Among the 566 patients with asymptomatic carotid bruit, the annual stroke rate given survival was 1.5% per year or 7.5% at 5 years by actuarial analysis. The annual stroke rate given survival for the 428 patients in the population-based cohort was 0.5% per year or 2.4% at 5 years. Patients with localized carotid bruit were not significantly different from those with diffuse carotid bruits in regard to subsequent cerebral ischemic events (P = .11). These data indicate that patients with asymptomatic diffuse or localized carotid bruit are approximately three times more likely to have ischemic stroke than a population sample matched for age and sex known not to have carotid bruit.

Oncology/Genetics


New prognostic factors are needed to guide the treatment of patients with non-small-cell lung cancer. We evaluated the prognostic value of altered expression ABO blood-group antigens, which have been implicated in the multistep process of carcinogenesis and tumor progression.

The presence of blood-group antigens was assessed immunohistochemically in paraffin-embedded tumor samples from 164 patients who underwent curative surgery for non-small-cell lung cancer from 1980 through 1982. Monoclonal antibodies were used to detect the A and B antigens, and Ulex europaeus agglutinin I to detect H antigen.

Survival of the 28 patients with blood type A or AB who had primary tumors negative for blood group antigen A was significantly shorter than that of the 43 patients with antigen A-positive tumors (P < 0.001) and of the 93 patients with blood type B or O (P = 0.002). The respective median survival times were 15, 71, and 39 months. Disease progressed significantly earlier in the 28 patients with tumors negative for blood-group antigen A than in the antigen A-positive patients (P < 0.001). Expression of blood-group antigen B or H in tumor cells did not correlate with survival. Cox proportional-hazards regression analysis showed that expression blood-group antigen A in tumor cells added significantly to the prediction of overall survival provided by other known prognostic factors among the patients with blood type A or AB (P = 0.004).

Express of blood-group antigen A in tumor cells is an important favorable prognostic factor in patients with non-small-cell lung cancer.

Oncology


The authors prospectively examined the use of estrogen replacement therapy in relation to breast cancer incidence in a cohort of women 30 to 55 years of age in 1976. During 367,187 person-years of follow-up among postmenopausal women, 722 incident cases of breast cancer were documented. Overall, past users of replacement estrogen were not at increased risk (relative risk, 0.98; 95% confidence interval, 0.81 to 1.18), including even those with more than 10 years of use (relative risk after adjustment for established risk factors, 0.70; 95% confidence interval, 0.45 to 1.10). However, the risk of breast cancer was significantly elevated among current users (relative risk, 1.36; 95% confidence interval, 1.11 to 1.67). Among current users, a stronger relationship was observed with increasing age but not with increasing duration of use. These data suggest that long-term past use of estrogen replacement therapy is not related to risk of breast cancer but that current use may modestly increase risk.

Pulmonary


Sleep apnea occurs much more frequently in middle-aged male MI survivors than it does in healthy men, report the authors of this case-control study from Australia. Men who have more than five episodes of apnea per hour have 23 times the risk of MI than do men with very few episodes.

An overnight polysomnographic study was conducted on 101 consecutive men, aged 37 to 65 (mean, 53.9), who had had an MI a mean of 24 days earlier (range, 6 to 61 days). Similar studies were carried out with 53 healthy age-matched male volunteers.

The mean hourly number of apnea episodes was 6.9 in the MI group and only 1.4 in the control group. The MI patients also had significantly longer episodes of apnea, a lower average and minimum oxygen saturation level during sleep, and a greater percentage of sleep time spent at low oxygen saturation.

The association between sleep apnea and MI was found to be independent of age, weight, hypertension, smoking, and cholesterol levels. The adjusted risk of MI increased with increasing severity of sleep apnea. There was a large increase in risk for men in the highest quartile (i.e., more than 5.3 apnea episodes per hour); these men had 23.3 times the risk of men in the lowest quartile (i.e., fewer than 0.4 episodes).

The authors note that the risks of recurrent myocardial ischemia and sudden arrhythmic death are higher in the early post-MI period. They further point out that sleep apnea often can be diagnosed and treated.