Correspondence

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Smoking, Vasospasm, and Pain

Sugishii and Takatsu showed in their article in Circulation that smoking is a major risk factor for coronary spasm as verified by arteriography.1 We recently demonstrated that smoking also increases the threshold for pain, a finding that might be relevant to the above observation.2 When 20 healthy volunteers underwent an experimental model of pain (electrical current on the forearm), it was noted that the threshold of pain increased significantly after inhaling a single cigarette (+0.24±0.44 arbitrary units) compared with the control experiment without smoking (−0.01±0.35 arbitrary units).

If confirmed by more elaborate studies, possibly on patients with congestive heart disease, our finding could mean that vasospasm may be prevalent in smokers, whereas its warning sign—"pain"—is reduced or even abolished by the effects of acute smoking. In other words, a doubly vicious action of acute smoking would have to be considered in which vasospasm is caused yet prevented from being felt.

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References


Mortality and Implantable Cardioverter-Defibrillators

Kim et al1 recently stated that in 68 patients receiving implantable cardioverter-defibrillators (ICDs), the overall perioperative mortality was 4.4% and that the mortality in 28 patients with an ejection fraction (EF) <30% was 11%. Bonnet et al2 stated that these are relatively high perioperative mortalities. They suggested that the experiences reported should be used to try to identify areas upon which to focus efforts to improve the mortality associated with implanting ICDs.

Such a focus has been reported recently by four institutions in Baltimore, Chicago, Houston, and Birmingham. They published details of their four surgical approach techniques and intraoperative and postoperative surgical management for 343 ICD patients from 1984 through 1991.3 The total number of deaths within 30 days was 8 (2.3%; 70% confidence limits [CL], 1.5% to 3.5%). One hundred fifty-four patients (45.2%; 70% CL, 42.2% to 48.1%) had EFs >30%, and 187 (54.8%; 70% CL, 51.9% to 57.8%) had EFs ≤30%. In these 341 patients, there were 7 deaths (2.1%) within 30 days. The EF for the remaining two patients, one of whom died, was not known.

For the EF >30% group of 154 patients, the 30-day mortality was 1 patient (0.65%; 70% CL, 0.08% to 2.2%). For the group of 187 patients with EF ≤30%, the 30-day mortality was 6 patients (3.2%; 70% CL, 1.9% to 5.2%). If one adds the "unknown EF" patient who died to the low EF group, the 30-day death rate for the low EF group becomes 3.7% (7 of 188; 70% CL, 2.3% to 5.7%). If one adds this patient to the >30% EF group, the 30-day mortality for the higher EF group becomes 1.3% (2 of 155; 70% CL, 0.42% to 3.0%). These results, as those reported elsewhere in the literature, remain well below the figures cited by Kim. The long-term actuarial survival of the lower EF group in one of the four institutions was about 50% at 5 years, whereas for the >30% EF group, it was about 83% at 5 years.

With regard to the correspondence referred to above, we do suggest that the surgical techniques and management practices described1 have been associated with low perioperative mortalities. Although there still may be some legitimate question as to the long-term survival of the low EF patients, at least this initial component should be amenable to better control.

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References


Reply

Mower et al suggest that surgical mortality rates of defibrillator implantation reported in the literature "remained well below" the rates reported in our previous study.1 To support their claim, they quoted a study2 of their own in which the surgical mortality rate of 343 patients was 2.3%. They also quoted a study by Joyce et al3 in which surgical mortality rate was 0% in 150 patients. In our report, the surgical mortality was 4.4%.

As discussed previously,1 our results, although limited by the small number of patients (68), are similar to those of many other larger studies from renowned institutions. Examples are as follows: the Johns Hopkins and Sinai Hospital of Baltimore (4.9% in 163 patients); University of Michigan Medical Center, Ann Arbor (8.5% in 200 consecutive patients); Cleveland Clinic Foundation (4.0% in 271 patients); the University of Washington, Seattle (4% in 101 patients); Massachusetts General Hospital and the Good Samaritan Hospital, Los Angeles (4.3% in 94 patients); a multicenter cooperative study of a second-generation implantable cardioverter-defibrillator (ICD) reported by Saksena et al (5.5% in 200 patients); another multicenter cooperative study of a third-generation ICD reported by Saksena et al (5.5% in 434 patients); and a 15-hospital multicenter study based on a registry maintained by a manufacturer of defibrillators (3.1% in 939 patients).4

Surgical mortality rates at individual institutions in this study1 ranged from 0% to 9.4%. (The 15 hospitals were Allegheny General Hospital, Pittsburgh; Baylor College of Medicine, Houston; Cleveland Clinic Foundation; Harper Hospital, Wayne State University, Detroit; Hospital of the University of Pennsylvania; Jackson Memorial Hospital, Miami; Mayo Clinic, Rochester; Milwaukee County Medical Complex, Milwaukee; Montefiore Medical Center, Bronx; Presbyterian University Hospital, Pittsburgh; Sinai Hospital of Baltimore; Sinai Samaritan Medical Center, Milwaukee; Stanford University; Vanderbilt University Medical Center; and VA Medical Center of Nashville.) Therefore, the statement that surgical mortality rates in the literature are "well below" the rate reported by us is incorrect and is not based

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Mortality and implantable cardioverter-defibrillators.
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