New Candidates for Promoting Coronary Revascularization: the Elderly

To the Editor:

In comparing survival between medical therapy and coronary revascularization for elderly patients with coronary artery disease (CAD), Graham et al. overstated benefits of revascularization according to their own data, as well as to the published literature. In Table 2, several characteristics of the medical therapy group are consistent with higher risk compared with the coronary bypass group, including more women, past congestive heart failure, higher serum creatinine values, and lower ejection fraction (EF). Though differences did not reach statistical significance, probably because of small numbers, their potential confounding effect cannot be discounted. The authors did not explain why patients aged 70 to 79 years were excluded from Table 2. Notably, the survival curves C in Figures 1 and 2 diverge immediately in favor of the surgical group, in contrast to typical early higher mortality of surgical patients, raising the possibility that high-risk patients in the medical therapy group were excluded from revascularization by their managing physicians. Moreover, the authors did not apply statistical tests to the survival curves to assess the significance of the observed differences. In addition, from Table 5, we calculated that about 25% (129/561) of subjects aged >80 years in the medical arm had multivessel CAD, along with reduced EF. In these subjects, revascularization is indicated but was not pursued, with no indication as to why. These subjects probably account for a substantial portion of the observed survival differences. It is reassuring that patients with preserved EF had similar mortality rates regardless of therapy used. Considering the small numbers in cells of Table 5, the significance of observed differences is questionable.

Our interpretation of the Trial of Invasive vs. Medical therapy in Elderly patients with chronic CAD (TIME) differs from that of Graham et al. In TIME, there was a slightly lower overall risk of death and no significant increase in risk of myocardial infarction in the medical arm, a remarkable finding considering that 31% of subjects had Canadian Cardiac Society functional class IV angina, which explains the increased need for hospitalization and revascularization.

Discussion of mortality benefits from interventions in the elderly ignores a main concern in this age group, ie, quality of life, especially considering the potential neurological and cognitive impairment of bypass surgery. Methodological limitations in this observational study should have led the authors to a more cautious interpretation of their findings. When appropriate indicates arise, revascularization should not be withheld from elderly patients. However, what our elderly patients with CAD need is not promotion of more invasive interventions but careful selection of suitable candidates according to available evidence.

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Response

We thank Drs Jabbour and Ravid for their appropriate comments. We agree that in our population of patients over the age of 80, there were some differences between the medical therapy group and the bypass surgery (CABG) group. The patients treated with percutaneous coronary intervention (PCI), however, were similar to those treated medically. We controlled for between-group differences at least to some extent in our statistical analyses. Because of space constraints during the editorial process, data for patients age 70 to 79 years were removed from Table 2, but they were qualitatively similar to data for older patients. Statistical tests were in fact performed on the survival curves; as mentioned in the article, the differences in survival according to any treatment strategy were significant in all age groups (P<0.0001). Because of the observational nature of this study, it was not possible to ascertain why patients with traditional indications for CABG (multivessel disease with reduced ejection fraction) were treated medically.

There are many issues complicating the use of invasive procedures in elderly patients with ischemic heart disease. The question of which elderly patient should undergo coronary angiography in the first place is difficult to answer. Frailty and fitness must be assessed on an individual basis. Once a decision is made to proceed with invasive assessment, the revascularization procedure of choice then becomes an issue. Many patients may not be ideal candidates for CABG on the basis of preference or frailty, but could likely tolerate attempted PCI, in many instances with good effect. Finally, regardless of the choice of revascularization modality, optimized medical therapy should be a priority in all patients.

We fully agree with the assertion that invasive interventions should be primarily reserved for those elderly patients who have clinical indications where evidence suggests a benefit. However, we stand by our global conclusion that age alone should not be a contraindication to revascularization.

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