

# Intervention Advised for Severe, Refractory Angina

BY SHERRY BOSCHERT  
San Francisco Bureau

SAN FRANCISCO — A consensus committee of 10 experts recommended transmyocardial revascularization to provide relief for some patients with severe refractory angina, Dr. Anno Diegeler reported at the annual meeting of the International Society for Minimally Invasive Cardiothoracic Surgery.

"We all know that transmyocardial

revascularization is a palliative treatment. It is not a first-line treatment of coronary artery disease," said Dr. Diegeler, of the University of Leipzig, Bad Neustadt, Germany. "There is a small group of patients with diffuse coronary artery disease with severe, refractory angina. We have a therapy that relieves angina in those patients."

The committee reviewed the data on transmyocardial revascularization and formulated recommendations that will be published in the society's journal, *Innovations*.

They analyzed results from six randomized, controlled trials involving a total of 967 patients that compared transmyocardial revascularization with maximal medical therapy. In addition, they looked at studies that compared coronary artery bypass grafting (CABG) with CABG plus adjunctive transmyocardial revascularization, drawing on three randomized, controlled trials involving 327 patients and an additional three nonrandomized trials.

Dr. Diegeler, chair of the committee,

outlined the recommendations at the meeting, dividing them according to two groups of patients.

The first group is stable patients with refractory, severe angina who are not amenable to conventional revascularization and who can be treated solely with transmyocardial revascularization or maximal medical therapy. For such patients, the committee recommended transmyocardial revascularization to provide sustained angina relief, reduce major adverse cardiac events, and improve exercise performance, on the basis of results of randomized, controlled trials (level A evidence); and to reduce readmissions and reinterventions, on the basis of one randomized, controlled trial and nonrandomized data (level B evidence).

The second group is patients with diffuse coronary artery disease and chronic angina who cannot be completely revascularized by CABG alone. For them the committee recommended adding trans-



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**Transmyocardial revascularization can bring relief to 'a small group of patients with diffuse coronary artery disease.'**

DR. DIEGELER

myocardial revascularization to improve the likelihood of long-term angina relief (up to 5 years), reduce 30-day mortality and major adverse cardiac events, and improve 1-year exercise performance.

The recommendations for CABG plus transmyocardial revascularization rather than CABG alone were based on levels A and B evidence and were all class II recommendations encompassing conflicting evidence or diverging opinions. The recommendations regarding sole transmyocardial revascularization versus maximal medical therapy were all class I recommendations with solid evidence and general agreement, said Dr. Davy Cheng of the University of Western Ontario, London, who was also a member of the consensus committee.

Compared with maximal medical therapy, transmyocardial revascularization reduced angina by at least two New York Heart Association classes and left more patients free of class III or IV angina at 1-5 years. The procedure also improved quality of life scores at 1 year.

The improvements in mortality and major adverse cardiac events seen at 30 days and in exercise performance at 1 year after CABG plus transmyocardial revascularization, compared with CABG alone, did not hold up at 5 years after treatment, Dr. Diegeler noted.

The difference between groups in exercise treatment test results at 1 year was a mean of 88 seconds favoring CABG plus transmyocardial revascularization (with a range of 52-123 seconds). "I leave it to you to decide if that's clinically significant or not," but the difference was statistically significant and was incorporated into the recommendations, Dr. Diegeler said. ■