Research Update

A shot in the arm for shock to the heart

Physicians at Vancouver's St. Paul's Hospital played a major role in an international study of heart attack patients with cardiogenic shock that shows that immediate angioplasty or bypass surgery improves the long-term chances of survival (*N Engl J Med* 1999;341[9]:625-34). The study was conducted in 30 centres in Europe, South America, New Zealand and North America, with the largest number of patients at St. Paul's Hospital.

A total of 302 patients were selected for the project from several thousand patients who were screened. The subjects all suffered cardiogenic shock within 24 hours of an infarction. Shock occurs as a complication in about 5% of all myocardial infarctions. Other criteria for inclusion were a systolic blood pressure of less than 90 mm Hg, and low cardiac output. There were no age or sex restrictions.

Patients were randomly divided into 2 groups; the experimental group received immediate angioplasty or bypass surgery within 48 hours of cardiac arrest, while the control group was treated with conventional medical therapy. Standard treatment has been to stabilize patients before carrying out the high-risk procedures. The patients who underwent angioplasty or surgery had a survival rate up to 20% higher after 6 months than the patients given medical therapy. Of the patients in the angioplasty/surgery group, those under age 75 did significantly better than those who were older.

"Overall, the mortality rate is quite dramatically reduced," says Dr. John Webb, a cardiologist and one of the study's lead authors. "But the benefit seems largely restricted to people under the age of 75. If you treat 1000 patients, you have 200 more people alive than if you hadn't treated those patients. And after one year, those numbers become even more dramatic."

A shorter hospital stay is another benefit of the surgical treatment option. The patients have been followed up for a year, and further follow-up is planned, depending on funding.

As a result of the study's findings, the American Heart Association and the American College of Cardiology have revised their guidelines for the treatment of heart attacks. In younger patients, "the standard of care is now early revascularization for shock," says Webb. The problem now is how to accommodate demand in terms of transportation, emergency department access and bed availability, he adds. — *Heather Kent*, Vancouver

An ACE inhibitor in the hole for cardiovascular prevention

A large international study has found that ramipril, an angiotensin-converting-enzyme (ACE) inhibiting drug, cuts the risk of cardiovascular-related death, heart attack, stroke, angioplasty/bypass surgery, admission to hospital, and complications of diabetes in patients with risk factors for cardiovascular disease. The 5-year study, involving 267 centres in 20 countries, was run out of McMaster University in Hamilton, Ont. The results were reported by Dr. Salim Yusuf, a professor of medicine at McMaster and the principal investigator, on behalf of all of the study investigators, and have been released on the Web site of the *New England Journal of Medicine* (**www.nejm.org**) before publication in the journal.

The Heart Outcomes Prevention Evaluation (HOPE) study involved high-risk patients — those aged 55 years and older with evidence of vascular disease or diabetes plus one other risk factor, such as high blood pressure, high "bad" cholesterol levels, low "good" cholesterol levels, or smoking. Patients with heart failure or a low ejection fraction were not included.