



**INSTITUT DE
CARDIOLOGIE
DE MONTRÉAL**

AFFILIÉE A
Université 
de Montréal

PRESS RELEASE

For immediate release

THE MONTREAL HEART INSTITUTE RESEARCH CENTRE MAKES A MAJOR DISCOVERY IN THE TREATMENT OF AORTIC VALVE STENOSIS

An experimental study based on HDL-cholesterol opens the way to a new type of treatment that could possibly lead to regression of this disease in patients

Montreal, April 18, 2008 - A team of scientists from the Montreal Heart Institute Research Centre, led by Dr. Jean-Claude Tardif, has completed an important study on animals suffering from aortic valve stenosis that showed that the administration of a new type of medication leads to an improvement in the aortic valve narrowing of sick rabbits. This type of treatment based on raising HDL, the so-called “good cholesterol”, level in patients suffering from aortic valve stenosis, could potentially transform the treatment approach of this disease, notably by avoiding open heart surgery. The study results have been published on-line this week in the *British Journal of Pharmacology*.

Renewed Hope for Patients

“We are delighted to see that the new type of drug used, based on HDL, led to the regression of the aortic valve stenosis in an experimental model,” underlined Dr. Jean-Claude Tardif, director of the Montreal Heart Institute Research Centre and professor of medicine at the Montreal Heart Institute and the Université de Montréal. “This important discovery warrants further clinical studies on patients suffering from this frequent disease. This new medical option could possibly provide us with an alternative to the cardiac surgery of aortic valve replacement.”

What is Aortic Valve Stenosis?

Aortic valve stenosis is the most common form of heart valve disease in Western countries. In Canada, it could affect some 150,000 persons. The disease is characterized by a narrowing of the aortic valve opening, causing a difference in blood pressure between the heart and the rest of the body, which is particularly dangerous for the patient. The main symptoms of severe aortic valve stenosis are exercise intolerance, angina and syncope (fainting). Its frequency in the population aged over 65 is 2% to 4%. Its major complications are, in addition to the need for cardiac surgery, heart failure and sudden death. The disease therefore represents a major health problem with dramatic consequences if replacement surgery is not performed in time. In the United States, about 50,000 patients a year must undergo aortic valve replacement surgery.

Details on the Study Conducted at the MHI

The study was conducted on rabbits given a diet rich in cholesterol until aortic valve stenosis was detected by echocardiography, the medical imaging ultrasound system used for humans. The animals were then divided into two groups: a control group given injections of a neutral solution, and a group treated for two weeks with injections of a drug based on raising the “good cholesterol” (ApoA-I mimetic peptide). The researchers chose the rabbit model for this study, as it is the best model known today for drawing parallels with the human disease, which is often associated with aortic valve calcification.

The findings were particularly interesting, since after only 14 days of treatment, the aortic valve opening had returned again to almost normal in the treated group, whereas it had improved by a mere 13% by eliminating the high-fat diet in the control group. As well, the thickness of the aortic valve decreased by 21% in the treated group, while remaining unchanged in the control group. Microscopic analysis revealed that valve lesions were significantly less extensive in the treatment group than in the control group. The treatment also reduced aortic valve calcifications.

About the Montreal Heart Institute

Founded in 1954, the Montreal Heart Institute constantly aims for the highest standards of excellence in the cardiovascular field through its leadership in prevention, ultra-specialized care, training of professionals, clinical and fundamental research, and assessment of new technologies. It is affiliated with the Université de Montréal and its clinical outcomes are among the best in the world.

The MHI Research Centre began its work in 1976, and major achievements have occurred since its creation. Today, there are some 500 employees, students and researchers at the MHI Research Centre. Its outstanding feature is the balance it achieves between basic research, clinical research and clinical care. Its prime focus areas of research are vascular disease, myocardial function, and electrophysiology. MHI researchers also contribute to the advancement of knowledge and medical applications in the fields of genomics (notably, genetics and pharmacogenomics), biomarkers, and preventive cardiology. To learn more about the Institute, please visit our website at www.icm-mhi.org.

About the Université de Montréal

Deeply rooted in Montreal and dedicated to its international mission, the Université de Montréal is one of the top universities in the world, particularly in the French-speaking world. Founded in 1878, the Université de Montréal now has 13 faculties and, together with its two affiliated schools, HEC Montréal and École Polytechnique, constitutes the largest centre for higher education and research in Québec, the second largest in Canada, and one of the major centres in North America. It brings together some 2,500 professors and researchers, accommodates over 55,000 students, offers more than 650 programs at all academic levels, and awards some 3,000 Master’s and PhD diplomas every year.

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