# The search for an early biomarker to fight atherosclerosis

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The *Journal of the American Heart Association* published the conclusive results from a study directed by Dr. Éric Thorin of the Montreal Heart Institute (MHI), which suggests for the first time that a blood protein contributes to the early development of atherosclerosis.

Dr. Thorin, his team and his collaborators discovered that the blood levels of angiopoietin-like protein 2 (angptl2) are six times higher in subjects with coronary heart disease than in healthy subjects of the same age. Their basic research study also revealed that angptl2, which is undetectable in young mice, increases with age in healthy subjects and increases prematurely in subjects who have high cholesterol and pre-atherosclerotic lesions. Entitled "Angiopoietin-like 2 promotes atherogenesis in mice," this study was conducted using an animal model consisting of three to twelve-month-old mice.

These results represent a major advance in the prevention and treatment of atherosclerosis. "Although much work remains to be done to broaden our knowledge of this protein's mechanisms of action, angiopoietin-like protein 2 may represent an early biomarker not only to prevent vascular damage but also to predict atherosclerotic disease," explained Dr. Thorin.

For 15 years, Dr. Thorin, a researcher at the MHI Research Centre and full professor at Université de Montréal, has been interested in the evolution of artery function during the aging process and in the underlying mechanisms of atherosclerosis. More specifically over the

past five years, he has looked at the role of this particular protein. Thanks to his work, we now know that angptl2 causes a high degree of vascular inflammation. Blood levels of this protein increase in patients with cardiovascular disease as well as in people with complications related to diabetes, obesity and cancer in which the small blood vessels are damaged, as all of these diseases are associated with chronic inflammation.

According to Dr. Anil Nigam, a cardiologist and specialist in cardiovascular disease prevention at the MHI and co-author of the study, "Prevention is the ideal solution to delay the onset of atherosclerosis, and an early blood marker such as angptl2—if future clinical studies confirm this finding—will serve as an important tool to identify at-risk subjects who do not present with any symptoms of atherosclerotic disease."

Provided by Montreal Heart Institute