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Singapore: Researchers at Montreal Heart Institute has demonstrated positive result from the medication of dalcetrapib in reduction of heart attacks, strokes, unstable angina, coronary revascularizations and cardiovascular deaths in patients with a particular genetic background.

According to the result, the patients also benefit from a reduction in the amount of atherosclerosis (thickened walls) in their vessels, paving the way to cardiovascular medicine with personalized or precision drugs.

The team led by Dr Jean-Claude Tardif and Marie-Pierre Dube performed the analysis of 5,749 patients who received dalcetrapib or placebo and provided DNA in a clinical study. A strong association was discovered between the effects of dalcetrapib and a specific gene called ADCY9 (adenylate cyclase 9) on chromosome 16, particularly for a specific genetic variant(rs1967309).

"These results will lead to a genetics-guided clinical study in patients with the appropriate genetic background to allow review by health regulatory agencies and to provide personalized therapy with dalcetrapib. It also offers great hope for precision treatments for patients with cardiovascular diseases and for curbing atherosclerosis, the first cause of mortality in the world," said Dr Jean-Claude Tardif, lead investigator and director, Research Center at the Montreal Heart Institute and professor of medicine at the University of Montreal.

The investigators tested multiple genetic markers across the entire genome in a procedure called genome-wide association study. "We used state-of-the-art genetic and statistical techniques to demonstrate that the effect of the patient's genetic profile was only observed in those treated with dalcetrapib and not placebo. We want to provide patients with additional personalized cardiovascular therapies in the years to come, for more efficacious and safer medicines," commented Dr Marie-Pierre Dube, director, Beaulieu-Saucier Pharmacogenomics Center, Montreal Heart Institute and professor of medicine at the University of Montreal.