Anti-clotting drug lowers risks in acute coronary syndrome treatment

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An oral anti-clotting drug, when added to standard medical treatment for acute coronary syndrome, lowered the risk of death, heart attack or stroke an average of 16 percent, according to research presented at the American Heart Association's Scientific Sessions.

The results were also published online by the New England Journal of Medicine.

The drug, rivaroxaban, proved effective in preventing the formation of thrombin, the enzyme that promotes the formation of blood clots, particularly after the placement of stents used in the treatment of ACS, an umbrella term for heart attacks and chest pain known as unstable angina — conditions in which the heart's blood supply is suddenly blocked.

The results are part of ATLAS ACS 2-TIMI 51, the Anti-Xa Therapy to Lower Cardiovascular Events in Addition to Standard Therapy in Subjects with Acute Coronary-Thrombolysis in Myocardial Infarction 51 Trial.

"For someone who just survived a heart attack, the last thing they want is to have another one," said C. Michael Gibson, MD, senior investigator of the TIMI Study Group, Chief of Clinical Research at the CardioVascular Institute at Beth Israel Deaconess Medical Center and an Associate Professor of Medicine at Harvard Medical School. "Despite our best efforts there's still a 10 percent risk of that heart attack coming back.

"With this new drug, we offer people the hope of improving their survival over the next two years by over 30 percent. That's an improvement we haven't seen since the introduction of aspirin."

ACS, which can be a heart attack or a precursor to one, is often diagnosed in an emergency room and is treatable if swift action is taken. It can develop over time through the buildup of plaque, fatty deposits often caused by cholesterol, which eventually narrow the arteries and make it more difficult for blood to flow.

Physicians have a number of intravenous medications that are effective in dealing with the acute phase of ACS, which often last three or four days. But longer-term treatment after hospital discharge has only been as good as the tools available to physicians treating outpatients.

Arterial clots are formed by "strings" of thrombin. But a traditional anti-clotting agent such as warfarin, carries too many risks and side effects and requires constant monitoring, making it infeasible to use as ongoing therapy on top of standard anti-platelet therapy for these patients.

"We know that people with a heart attack or unstable angina make too much thrombin," said Gibson. "We looked at whether reducing the production of thrombin with rivaroxaban reduces the risk of death, heart attack or stroke."

In an analysis of 15,000 people hospitalized with a recent heart attack or unstable angina, researchers found a 16 percent reduced risk of death, stroke or heart attack among patients who took rivaroxaban – when combined with aspirin and a thienopyridine such as clopidogrel, commonly known by its brand name Plavix – and a reduced risk of death from all causes by more than 30 percent when compared to patients who did not take rivaroxaban.

The study compared patients who took either 2.5 mg or 5 mg doses of rivaroxaban twice daily against a control group that received a placebo. The strongest results were seen in patients on the 2.5 mg dose.

Researchers also found the formation of clots caused by stent placement, an often fatal complication, was reduced by 31 percent compared to patients who did not receive rivaroxaban.

As with other forms of anti-coagulants, researchers noted an increase in internal bleeding among those who took the drug as opposed to patients who received a placebo. There was no increase in fatal bleeding.

"Blocking the production of thrombin is an important new way to improve acute coronary syndrome patients' long-term risks of death, stroke and heart attack after being hospitalized with ACS," said Gibson.

Provided by Beth Israel Deaconess Medical Center