New medication may treat underlying causes of hypertrophic cardiomyopathy

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The new, investigational heart medication mavacamten may improve key structural abnormalities of obstructive hypertrophic cardiomyopathy, a condition characterized by thickened heart muscle that obstructs pumping of blood through the heart, according to research from the Phase 3 EXPLORER-HCM trial, to be presented at the American Heart Association's Scientific Sessions 2020.

Hypertrophic cardiomyopathy affects 1 in 500 people and is caused by genes expressed in the heart muscle that trigger the walls of the heart chamber (the left ventricle) to contract harder and thicken more than normal. In obstructive hypertrophic cardiomyopathy, the wall between the two bottom chambers of the heart thicken, and the walls of the chamber that pumps blood can also become stiff. This may block or reduce the flow of blood from the left ventricle of the heart to the aorta. Current treatments for hypertrophic cardiomyopathy focus on relieving symptoms, such as chest pain and shortness of breath—especially with physical exertion, fatigue, abnormal heart rhythms, dizziness, fainting (syncope) and/or swelling in the ankles, feet, legs, abdomen and veins in the neck.

The EXPLORER-HCM clinical trial is an international, double-blind, placebo-controlled, phase three trial to evaluate the efficacy of mavacamten for adults with symptomatic obstructive hypertrophic cardiomyopathy. Recently, the primary results of the trial were announced, and mavacamten was shown to improve symptoms among those with obstructive hypertrophic cardiomyopathy. Among 244 patients (average age 58) who completed the trial, mavacamten led to significant improvement in reducing obstruction to flow through the heart, improving exercise capacity and symptoms.

This study is an additional analysis of data from the EXPLORER-HCM trial. Researchers found that mavacamten also reduces the size of the enlarged left atrium of the heart, decreases elevated filling pressures (reduces measures of stiffness) and restores normal mitral valve motion.

Participants with obstructive hypertrophic cardiomyopathy were randomly assigned to receive either mavacamten (in doses ranging from 2.5 to 15 mg) or a placebo daily for 30 weeks. Cardiac testing and patient evaluation were conducted every two-to-four weeks during the study period.

In this study, analyses of serial echocardiograms (ultrasounds of the heart) were reviewed to investigate the effect mavacamten had on additional specific measures of the heart's structure and function. Data from the analyses indicates 30-weeks of treatment with mavacamten led to improvement in measurements of the left ventricle's wall thickness and markers of blood flow through the heart. Additionally, abnormal motion of the mitral valve, which often leads to obstructive blood flow, and mitral valve regurgitation were resolved in most patients.

"Improvement in the key echocardiographic

features of hypertrophic cardiomyopathy supports the hypothesis that mavacamten can be used as a disease-specific therapy, which would be a significant advance in therapy for this population," said Sheila M. Hegde, M.D., M.P.H., lead author of the study, a cardiovascular medicine specialist at Brigham and Women's Hospital and an instructor in medicine at Harvard Medical School, both in Boston. "These findings reinforced and extended data from prior open label trials. Additional changes in measures of cardiac structure and function were also observed including reduction in the size of the left atrium. Together, these results reflect this medication's impact on the underlying pathophysiology of hypertrophic cardiomyopathy. A long-term extension trial is ongoing and will provide additional insight on the long term-impact on cardiac structure and function."

More information: Session: HF.APS.29 - Different Aspects of Hypertrophic Cardiomyopathy

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