

Sex and race disparities found in management of patients with hypertrophic cardiomyopathy in the hospital

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In recent decades, implantable cardioverter-defibrillator (ICD) use in the management of patients with hypertrophic cardiomyopathy (HCM) has increased. However, a new Mayo Clinic study finds that ICDs are not used as often for female patients and patients of color. Data from the National Inpatient Sample, an all-payer administrative database of inpatient hospitalizations, showed disparities regarding which patients commonly receive this therapy in the hospital. The data also revealed regional variations in the overall use of ICDs in patients with hypertrophic cardiomyopathy.

Hypertrophic cardiomyopathy is a disease in which the heart muscle becomes abnormally thick, making it harder for the heart to pump blood. This may cause chest pain, shortness of breath or problems with the heart's electrical system that can result in arrhythmias or even [sudden death](#). Medications and surgical procedures can be used to address the symptoms of hypertrophic cardiomyopathy. Some patients are still at risk of cardiac arrest and opt to receive an implantable cardioverter-defibrillator, which continuously monitors their heartbeat and delivers precise electrical shocks when needed to restore a normal heart rhythm.

"Racial disparities exist in hypertrophic cardiomyopathy with regards to disease expression and worse outcomes. As with sex-specific differences, this could be the results of systemic bias with inequity of clinical care. The fact that ICD use is more common in large and

teaching hospitals suggests that patients in smaller hospitals may not have access to specialists in hypertrophic cardiomyopathy management. Improving access to centers offering the highest level of specialized care may help reduce these disparities. How our findings relate to care access, socioeconomic status and patient-shared decision-making warrants further study," says Sri Harsha Patlolla, M.B.B.S., a postdoctoral fellow in the Department of Cardiovascular Surgery at Mayo Clinic.

Dr. Patlolla is first author of the study, which identified 23,535 adult hospitalizations for hypertrophic cardiomyopathy during a 12-year time span. [Study findings are published in *Mayo Clinic Proceedings*](#). The proportion of these patients who received an ICD increased from 11.6% in 2003 to 17% in 2014. Regional differences reflected overuse in some areas of the country and underuse in others. Women had a lower proportion of ICD use compared to men across the study period; 12.8% versus 22.7% respectively. Women also had higher rates of ventricular arrhythmias, being more likely to receive an ICD after experiencing heart electrical issues. Other studies have revealed that women with hypertrophic cardiomyopathy are diagnosed later and show more symptoms as compared to men.

"With those findings in mind, several different explanations could support our results," says Jeffrey Geske, M.D., a cardiologist at Mayo Clinic. "It is possible that focusing on symptom management shifts focus away from sudden death risk assessment in women more than men, and shared decision-making may result in different choices between sexes. In combination with current findings, these suggest a need for providers to recognize [sex-specific differences](#) in outcomes and management trends in women with hypertrophic cardiomyopathy."

ICD use was similar across all races, but differences became apparent when considering patient demographics by race. Compared to white patients admitted to the hospital for hypertrophic cardiomyopathy,

patients of color were younger, less affluent and more likely to receive care at a teaching hospital. Patients of color also showed higher incidence of hypertension, kidney disease and atrial fibrillation.

"The ICD trends raise important questions about the underlying causes of these disparities," says co-author Steve Ommen, M.D., a cardiologist and medical director of the Mayo Hypertrophic Cardiomyopathy Clinic. "Why are patient outcomes different based on sex and race? Does this reflect an inherent bias, or is it the result of underlying differences in disease expression? As further studies are pursued, providers should seek to eliminate potential bias in ICD decision-making, given the known mortality benefit associated with appropriate ICD implantation."

"Sudden cardiac death risk stratification and ICD decision-making are pillars of clinical care of patients with hypertrophic [cardiomyopathy](#). Despite growing recognition of this disease, the degree of inequity across patient populations was quite surprising," says Hartzell Schaff, M.D., a cardiovascular surgeon at Mayo Clinic and senior author of the study.

"Regardless of whether this inequity reflects access to care, provider bias, disease expression, shared decision-making or another explanation, I believe that greater access to multidisciplinary [hypertrophic cardiomyopathy](#) centers with graduated levels of expertise remains important for the best possible care of patients with HCM, a finding highlighted in the [most recent ACC/AHA guidelines](#)," says Dr. Schaff.

Provided by Mayo Clinic

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