

Heart failure patients have higher risk of fractures

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Heart failure patients are at higher risk for fractures, including debilitating hip fractures, than other heart patients and should be screened and treated for osteoporosis, Canadian researchers reported in *Circulation: Journal of the American Heart Association*.

One year after an emergency room visit, 4.6 percent of heart failure patients experienced a fracture compared to only 1 percent of other heart patients. The one-year rate for hip fractures was 1.3 percent for heart failure patients compared to only 0.1 percent for other heart patients.

After researchers adjusted for other risk factors, heart failure patients had four times the risk of fracture and 6.3 times the risk of hip fracture as patients with heart attacks, chest pain or rhythm disturbances.

"This is the first study to link heart failure patients to a higher risk of fractures," said Justin A. Ezekowitz, M.D., senior author of the study and director of the Heart Function Clinic and assistant professor of medicine at the University of Alberta in Canada.

According to the study, heart failure is a leading cause of hospitalizations and death, occurring in 2.2 percent of the general population and 8.4 percent of those older than age 75. Osteoporosis occurs in about 25 percent of women and 12 percent of men older than 50 years. Heart failure and osteoporosis also share common risk factors such as older age, female sex, smoking and type-2 diabetes.

The study included 16,294 patients with heart disease presenting at emergency rooms in Alberta, Canada from 1998 to 2001. Slightly more than 2,000 patients, average age 78, presented with a new diagnosis of heart failure. The primary outcome was fracture requiring hospital admission at one year follow-up that was not due to trauma or other disease. Researchers excluded patients with hospitalization for heart failure two years prior to the ER visit and patients with conditions known to modify fracture or fall risk.

Researchers ascertained prescription medication use based on database claims 60 days prior to and 60 days after the emergency room visit. The use of bisphosphonates and other osteoporosis medications was higher in the non-heart failure control group. But even when researchers excluded these patients, the risk of fracture was of similar magnitude.

Even after adjusting for medications known to affect the bones, dosages and co-morbidities, heart failure patients had a fourfold higher risk of fracture, Ezekowitz said. Women have higher rates of osteoporosis, but when researchers controlled for gender with age-matched controls, heart failure patients still had higher fracture rates than other heart patients.

The reasons for this remain unclear, Ezekowitz said. "It may be that heart failure patients aren't getting enough calcium or vitamin D." Furthermore they noted, parathyroid hormone, which handles calcium and magnesium affecting bone growth and rebuilding, may elevate as heart failure worsens. Two other possible reasons are dietary intake and less exercise.

"Most heart failure patients are placed on a strict diet, but some don't adhere to the diet or are less inclined to eat," Ezekowitz said.

"Additionally, people with heart failure exercise less due to fatigue and a lower exercise tolerance. Lack of exercise can weaken the bones."

Findings from the study identified important areas for immediate improvements, he said. "Most of these patients didn't get adequate screening despite meeting the criteria for screening with a bone mineral density testing because of their age. And only a handful of heart failure patients were being treated for osteoporosis."

Fractures, especially hip fractures, can be devastating in older adults. "Hip fracture severely reduces mobility and increases the risk of lung infections and blood clots," Ezekowitz said. "To make this worse, some patients with heart failure aren't candidates for surgical intervention because of the underlying heart disease."

Further study is needed to determine the mechanism linking heart failure and fractures, he said. "Until then, heart failure patients should be screened for osteoporosis and treated if necessary."

Source: American Heart Association

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