Frequent Limb Movement Linked to LVH

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NEW ORLEANS – Frequent periodic leg movements during sleep were associated with left ventricular hypertrophy in patients with restless legs syndrome, in a study presented at the meeting.

Moreover, patients who had sleep disturbance due to frequent periodic leg movements and severe LVH were at increased risk for heart failure, recurrent hospitalizations, and death.

"We have known for a long time that LVH is a poor prognostic factor that increases the risk of cardiac events. What is new ... is that it appears that restless legs syndrome is another risk factor that may predispose patients to, and lead to more complications of, LVH," Dr. Arshad Jahangir said at the meeting.

Dr. Jahangir, principal investigator in the study and professor of medicine at the Mayo Clinic in Scottsdale, Ariz., said that the findings need to be confirmed in larger studies. Also, it will be important to evaluate whether effective treatments for restless legs syndrome can prevent adverse outcomes associated with LVH.

Approximately 12 million Americans have restless legs syndrome. The condition is increasingly common with age and is implicated in about one-third of all cases of insomnia. Up to 90% of patients also have periodic limb movement disorder. The mechanisms that drive the disorder are not fully understood, Dr. Jahangir said, but the sympathetic nervous system is involved and patients typically have increased heart rate and blood pressure.

The study enrolled 584 restless legs syndrome patients who underwent

overnight polysomnography studies. Patients were stratified according to frequency of leg movements during sleep: 45% had frequent leg movements, defined as a Periodic Movement Index [PMI] of more than 35 per hour, and 55% had infrequent leg movements, defined as a PMI of 35 or fewer movements per hour. Despite having a left ventricular ejection fraction of around 60% at baseline, the group with frequent periodic limb movements had a significantly higher left ventricular mass, mass index, and posterior wall thickness, indicating the presence of LVH.

At baseline, the groups with frequent versus infrequent periodic limb movements had similar clinical and echocardiographic parameters, and were comparable for the presence of cardiovascular risk factors, including hypertension, diabetes, heart failure, and renal dysfunction. Patients with frequent periodic limb movements were older (median age 67 vs. 61 years), more often male, had more atrial fibrillation (30% vs. 17%), and more underlying coronary heart disease than those with infrequent periodic limb movements.

The presence of severe LVH [defined as left ventricular mass index >116 g/m^2] and atrial fibrillation led to a significantly greater likelihood of heart failure, recurrent hospitalizations, and death over a mean follow-up of 3 years. Dr. Jahangir said that even in participants with frequent periodic limb movements and no atrial fibrillation, patients with severe LVH had a greater number of cardiac events.

Severe LVH was found in 37% of those with atrial fibrillation and 20% of those without it, suggesting that underlying electrical dysfunction and restless legs syndrome may act together to lead to adverse cardiovascular outcomes.

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To see a video interview with Dr. Jahangir, scan this QR code or visit www.youtube.com/watch?v=qvm1sSQ9LdM&NR=1.