

Heart rate recovery predicts clinical worsening in pulmonary hypertension

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Heart rate recovery at one minute after a six-minute walking distance (6MWD) test is highly predictive of clinical worsening and time to clinical worsening in patients with idiopathic pulmonary arterial hypertension (IPAH), according to a new study.

"Ours is the first study to show that heart rate recovery at one minute of rest (HRR1) following a 6MW test is a strong predictor of clinical worsening in IPAH [patients](#)," said Omar A. Minai, MD, staff physician in the Department of Pulmonary, Allergy, and Critical Care Medicine at the Cleveland Clinic. "Predicting long-term prognosis in these patients usually requires analysis of several pieces of data in complicated risk scores. This easily measured, cost-free [biomarker](#) may ultimately advance patient care in view of its ability to accurately predict clinical worsening even in patients receiving treatment for [pulmonary hypertension](#)."

The findings were published online ahead of print publication in the American Thoracic Society's [American Journal of Respiratory and Critical Care Medicine](#).

The study enrolled 75 patients with a diagnosis of IPAH, confirmed by right heart catheterization. Heart rate was recorded at the end of the 6MW test and then one minute after completing the test. Clinical worsening was defined as any of the end points of death, [lung transplantation](#), hospitalization for worsening PH, or escalation of PH therapy. The cutoff value for abnormal HRR at one minute following the 6MW test was identified as 16 beats. A greater reduction in [heart rate](#) after exercise indicates a better-conditioned heart.

"Patients with HRR1

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