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In-hospital treatment of obstructive sleep apnea could be an important additional method for the management of many patients with heart failure decompensation

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Paradoxically, despite the improved management of most medical conditions, the incidence and prevalence of heart failure (HF) are increasing and the mortality is very high. Thus, new and imaginative HF management strategies are required and the identification and treatment of highly prevalent comorbidities with known detrimental effects such as obstructive sleep apnea (OSA) may, therefore, have a high potential for a clinically important impact. Patients with HF have a higher prevalence of OSA than the general population and an association between OSA and poor outcome in patients with HF was shown recently. The treatment of OSA with positive airway pressure (PAP) improves oxygenation, sympathetic nerve activity and afterload, resulting in improved systolic function in patients with chronic heart failure and OSA.

The authors' trial is the first approach to expedited diagnosis and treatment of OSA during hospital admissions for acute decompensated HF studied in a randomized trial. Such an approach is not part of the current standard of care even for stable patients with heart failure. Patients with acute decompensated HF underwent an attended in-hospital sleep study within 2 days of hospital admission to establish the diagnosis of sleep-disordered breathing. The participants were 46 consecutive patients with HF who had OSA, randomly assigned to either the intervention arm (n = 23), with in-hospital treatment of OSA using auto-adjusting positive airway pressure (PAP) along with standard treatment of acute decompensated HF, or to the control arm (n = 23), in which they received only standard treatment. The primary outcome was the change in left ventricular ejection fraction (LVEF) 3 nights after randomization.

The results showed that LVEF change from baseline to 3 days postrandomization in the intervention arm was significantly superior to that of the control group and the improvement between the two groups persisted after adjustment for baseline LVEF, type of cardiomyopathy, BMI, AHI, and sex.

The authors concluded that an approach of early identification and in-hospital treatment of OSA, by PAP, in patients with acute decompensated HF is feasible and resulted in improvement in systolic function. The relatively fast improvement suggests that the change is probably related to improved cardiac volumes and hemodynamics including preload and, possibly, reduced left ventricular wall stress with PAP treatment. Overall, the positive findings of this study, taken together with previous studies in the area of OSA and heart failure, support the consideration of a change in clinical practice in favor of the expedited identification of OSA in hospitalized patients with heart failure. The impact of this approach on out-of-hospital outcomes requires further investigation.

Comment on a paper:
Rami N. Khayat, William T. Abraham, Brian Patt, Min Pu, David Jarjoura – In-Hospital Treatment of Obstructive Sleep Apnea During Decompensation of Heart Failure. *CHEST* October 2009 vol. 136 no. 4 991-997