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**“Obesity Hypoventilation Syndrome as a Predictor for 30-day Hospital Readmissions
Amongst Congestive Heart Failure Patients”**

Congestive heart failure (CHF) is the most common cause of hospitalization in patients aged 65 years or older. Furthermore, readmission rates in CHF patients are the highest amongst all hospitalized patients, with the national rate being 25%. Because of the extraordinary cost burden of CHF, there is a need to identify the predictors of CHF readmissions. Comorbidities are identified as a predictor of CHF readmission, with chronic kidney disease, chronic obstructive pulmonary disease, diabetes mellitus, anemia, atrial fibrillation, and prior myocardial infarction being well studied. Obesity hypoventilation syndrome (OHS) has been studied as a comorbidity of heart failure, but it has not been studied as a predictor of CHF readmission. OHS refers to hypercapnia in obese individuals without other known causes of hypoventilation. This study aims to identify OHS as a predictor of 30-day hospital readmissions in CHF patients.

This retrospective cohort study was reviewed and approved by the local IRB. Medical records of patients that were admitted to the hospital with a diagnosis of CHF from 01/01/2024 to 01/01/2026 were pulled from Slicer Dicer in Epic with the following inclusion criteria: age of 18 years or older, admitted to inpatient unit during a hospital encounter, discharged from index admission alive, and a diagnosis of heart failure. Patients with OHS and obesity were also extracted. Of that, 122 patients had OHS. Patients with a BMI greater than 30 were propensity matched to the OHS group via BMI, age, and comorbidities. All 30-day readmissions were considered within the period of the study.

A total of 244 patients were analyzed. The OHS patients had a 54.92% 30-day readmission rate, with 67 of the 122 being readmitted. The control group had a 25.41% 30-day readmission rate, with 31 of the 122 being readmitted. An odds ratio was calculated to be 3.58, and a Chi-squared analysis provided a p-value < 0.001.

In this propensity matched cohort, patients with OHS had significantly higher 30-day hospital readmission rates than the matched patients without OHS. This suggests that OHS contributes to poorer outcomes following hospitalization for CHF. This could be due to persistent hypoventilation worsening CHF symptoms, increased sympathetic activation and an increase in cardiac output, pulmonary hypotension vasoconstriction and right ventricular dysfunction due to hypoxia, volume overload, and more. Clinical significance of this study is to identify early OHS in patients with CHF, have closer outpatient follow up for OHS patients discharged from the hospital, and emphasize the importance of good counseling for patients with OHS on using their positive airway pressure machines for treatment.