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Association Between Initiation of Pulmonary Rehabilitation and Rehospitalizations in Patients Hospitalized with Chronic Obstructive Pulmonary Disease

During my long-term care rotation, I noticed that many residents had underlying respiratory conditions, such as COPD, which made them more susceptible to developing respiratory infections, including pneumonia. These infections can result in serious complications, often requiring hospitalization for acute respiratory failure or COPD exacerbations. Because respiratory illnesses are common among the elderly population, I became interested in learning more about the role of pulmonary rehabilitation in improving recovery, enhancing functional status, and reducing the risk of hospital readmission after discharge to subacute rehabilitation. This topic was especially relevant because one of the patients I presented during my site evaluation was admitted to subacute rehabilitation following hospitalization for pneumonia and a COPD exacerbation.

The article, “Association Between Initiation of Pulmonary Rehabilitation and Rehospitalizations in Patients Hospitalized with Chronic Obstructive Pulmonary Disease,” by Stefan et al., was a retrospective cohort study evaluating Medicare recipients 66 years or older who were hospitalized for COPD. This study included 197,376 patients from 4,446 hospitals across the United States and examined whether initiating pulmonary rehabilitation within 90 days of hospital discharge affected rehospitalization rates. The primary goal was to determine whether pulmonary rehabilitation was associated with fewer hospital readmissions following a COPD hospitalization. Pulmonary rehabilitation uses a multidisciplinary approach to improve functional status and recovery in patients with chronic lung disease and consists of supervised exercise and breathing techniques; however, this study focuses on whether participation in pulmonary rehabilitation after discharge was associated with less rehospitalizations.

The evidence from the study demonstrates that approximately only 1.5% of eligible patients started incorporating pulmonary rehab within 90 days after being discharged. Although this is a significantly low rate of patients who partook in pulmonary rehab, the patients who did experienced far better outcomes compared to those who did not. For those that participated, rehospitalization rates decreased by 17% over the span of a year. Also patients who participated in pulmonary rehab spent less days in the hospital and nursing facilities, and given the evidence from the study, this plays an important role in improving recovery and decreasing healthcare utilization after hospitalization for COPD.

However, the study also had limitations. Because it was a retrospective observational study, it could only demonstrate an association rather than a direct cause-and-effect relationship. Additionally, patients who chose to participate in pulmonary rehabilitation may have been more motivated or healthier than those who did not participate, which could have influenced the results.

One strength of this study was that it included a very large sample size, consisting of over 200,000 Medicare beneficiaries across thousands of U.S hospitals. This makes the evidence highly applicable to elderly patients who are commonly encountered in long-term care and rehabilitation settings. Another strength was using propensity scoring to organize groups, making them as similar as possible to reduce differences between patients who participated in pulmonary rehab and those who did not. Limitations of this study included that it was a retrospective observational study, so it only demonstrated an association between pulmonary rehab and a lower readmission rate, but it could not assess whether it was the only reason for the improved outcomes.

Overall, this study reinforces the importance of incorporating pulmonary rehabilitation after hospitalization for COPD exacerbations. In long-term care and subacute rehabilitation settings, many patients experience significant functional decline after respiratory illnesses and are at high risk for rehospitalization. The findings from the article suggest that pulmonary rehabilitation helps improve recovery, reduce hospital readmissions, and allow patients to spend more time at home rather than in healthcare facilities. Understanding the benefits of pulmonary rehabilitation helps clinicians better recognize appropriate candidates for referral and supports efforts aimed at improving outcomes in older adults with chronic lung disease.