claims were collected from multi-state (Kansas, Missouri, Iowa, Wisconsin, Nebraska, Minnesota, Texas, Utah, North Dakota, South Dakota and Indiana), multi-year (2011-2017) Medicare fee-for-service claims data. We further required at least 1-year enrollment before the first OSA claim. Evidence of PAP utilization and index date was defined based on the first Healthcare Common Procedure Coding System PAP initiation codes (E0601, E0470, E0471) after first OSA diagnosis. MACE was defined as the first occurrence of myocardial infarction, coronary revascularization, stroke, or heart failure (identified by diagnostic and procedure code claims) after PAP initiation. Analyses were adjusted by age at initial OSA diagnosis, sex, race and presence of hypertension, type 2 diabetes, obesity, and evidence of MACE prior to the index date.

Results: Our sample included 212,445 eligible Medicare beneficiaries with evidence of OSA diagnosis (mean [SD] age 75 [5.7] years; 45.2% women; median [Q1, Q3] follow-up 4 [2.0, 4.9] years at censoring). Five-year MACE cumulative incidence rate was 59.3% and the mortality rate was 17.8%. In adjusted analyses, OSA patients with evidence of PAP utilization (50.8%) had significantly lower MACE incidence risk (HR=0.812; 95%CI=0.803-0.822; p<0.0001) when compared to those without evidence of using PAP. OSA patients with evidence of PAP utilization also had significantly lower mortality risk (HR=0.575; 95%CI=0.560-0.591; p<0.0001). Pre-existing hypertension, type II diabetes and obesity were also significantly associated with increased mortality and MACE risk.

Conclusion: PAP utilization based on device initiation derived from claims data is associated with lower MACE incidence and mortality in older adults that are Medicare beneficiaries.

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0775

IMPACT OF INSOMNIA, DEPRESSION AND ANXIETY ON ADHERENCE TO UPPER AIRWAY STIMULATION FOR OBSTRUCTIVE SLEEP APNEA: ADHERE REGISTRY UPDATE

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Introduction: Insomnia, depression and anxiety are common comorbid conditions in patients with obstructive sleep apnea (OSA) and can negatively impact positive airway pressure (PAP) therapy adherence. Subsequent intolerance to PAP may lead to surgical treatment such as upper airway stimulation (UAS). We sought to determine the impact of baseline insomnia, anxiety or depression on UAS therapy adherence using data from a large multi-center registry.

Methods: The ADHERE registry collects information on patients undergoing UAS (Inspire Medical, Golden Valley, MN) including baseline history of insomnia, depression, anxiety and the Insomnia Severity Index (ISI) questionnaire. We determined overall prevalence of insomnia, depression and/or anxiety, as well as UAS adherence after 6 months of therapy in groups with insomnia, depression, anxiety or none of these conditions. Using ISI to quantify insomnia, adherence in patients with no/mild insomnia (ISI < 15) was compared to those with moderate/severe insomnia (ISI ≥ 15).

Results: 1639 patients were included; 10% reported a history of insomnia, 23% depression and 16% anxiety. There was no difference in UAS adherence between groups with or without a history of insomnia, depression, or anxiety. A baseline ISI score was available in 470 patients with no history of insomnia, and in 81 patients with a history of insomnia. In patients with no history of insomnia, 59% had ISI scores ≥15, while in those with a history of insomnia, 85% had ISI scores ≥15 ($p < 0.001$). There was no difference in therapy usage between patients with ISI scores <15 and ≥15 (6.7 ± 2.2 hours/night versus 6.4 ± 2.5 hours/night, $p = 0.5$).

Conclusion: This study examined the impact of insomnia, depression or anxiety on adherence to UAS therapy for OSA. Patients with and without these conditions had similar UAS adherence. We found that insomnia as objectively based on the ISI score may be underdiagnosed in UAS patients who have no subjective history of insomnia at baseline. Despite this, ISI severity did not impact UAS adherence. Longer term follow-up with serial ISI scores and adherence data is needed to further understand how insomnia severity impacts UAS therapy outcomes and usage.

Support (If Any):

0776

THE 2021 CPAP RECALL. A REPORT FROM A SINGLE PRACTITIONER'S EXPERIENCE

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Introduction: CPAP is the gold standard in the treatment of OSA. While CPAP has been characterized as cumbersome, patients derive benefit from this therapy and many report inability to sleep without the use of CPAP. In this context, the 2021 CPAP recall has represented a major challenge for all stakeholders in the delivery and management of OSA. Patients have been the most affected by the uncertainties triggered by the recall. The purpose of this report is to evaluate continued therapy among patients who have been able to replace their PAP equipment.

Methods: Consecutive patients seen in follow-up visit following replacement of the recalled unit are included. At the time of writing, the cohort includes 49 patients (age 64+/- 10; BMI: 34 +/- 9; AHI: 35+/-26; male: 27). Prior to the unit replacement (T1), 20 were on Auto-PAP, 2 on Auto-BiPAP, and 23 on CPAP. Only 6 units have been replaced by the manufacturer with the remaining patients opting to have their units replaced with the other main brand available in the US. At follow-up (T2), only 4 continued CPAP, 2 on Auto-VPAP and the remaining on Auto-PAP. Replacement units were prescribed based on the previous settings with modifications based on the clinical assessment. For those on Auto-PAP (or bilevel settings), their pressures were not significantly different from baseline to follow-up (T1: minimum pressure 7.2+/-3; maximum pressure 10.8+/-4. T2: minimum pressure: 7.1+/-3; maximum pressure 11.5+/-3). For those on CPAP who have continued therapy with Auto-PAP, the T1 pressure was 8.8+/-3 and their 90-95% pressure at T2 was 9+/-3 cwp (p<0.01).

Results: The cohort showed adherence of 442+/-79 min at T1, which was increased at T2 (455+/-69, p<.05). 4-hr adherence was comparable at 94+/-9 and 96+/-9, respectively. The Epworth Sleepiness Scale (ESS) was comparable at T1 (4.3+/-3) and T2 (4.6+/-3). Of interest, the unit's estimated AHI was improved at T2 1.9+/-2 when compared to T1 at 3.7+/-4 (p<0.01), which was not explained by type or brand of therapy. An unexpected

finding was the differential improvement in the level of adherence between males and females where the change in adherence from T1 to T2 for males was 24+/-39 min, and for females 0.5+/-42.
Conclusion: Patients on CPAP therapy have faced significant challenges due to the 2021 recall from one of the main producing brands. The results of the study illustrate the slow response in the replacement of the recalled units. Only 12% of the units in the present cohort were replaced within the recall program. The results document the resilience of this cohort in maintaining a high therapeutic adherence despite the uncertainties created by the recent recall.
Support (If Any):

0777

THE OHS PATHWAY: AN EMR-INTEGRATED CLINICAL PATHWAY TO FACILITATE BIPAP ON DISCHARGE FOR HOSPITALIZED PATIENTS WITH OBESITY HYPOVENTILATION SYNDROME

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Introduction: With the rise of severe obesity, obesity hypoventilation syndrome (OHS) is increasingly recognized as a cause of sleep disordered breathing and hypercapnic respiratory failure. OHS is often diagnosed in the inpatient setting when patients present with acute respiratory failure, at which point 18-month mortality approaches 23%. Positive airway pressure (PAP) is a highly effective treatment for OHS. Clinical responses to PAP therapy include improvement in symptoms, gas exchange, hospitalization rates, and mortality. The American Thoracic Society published guidelines in 2019 recommending patients hospitalized with acute respiratory failure suspected of having OHS be discharged on nocturnal NIV therapy. Insurance criteria significantly limit access to home NIV/PAP without a sleep study, and inpatient providers seldom have success prescribing this treatment on discharge.
Methods: We first surveyed providers from a large academic hospitalist group to assess for knowledge gaps and challenges in OHS management. We then recruited inpatient respiratory therapists, providers, and care coordinators to design an EMR-integrated clinical pathway. The pathway begins with diagnostic criteria for OHS, then directs providers through the insurance criteria for BiPAP for hypoventilation, which do not require a sleep study. The criteria include wake PaCO2 ≥ 45mmHg, ≥ 7mmg increase in PaCO2 during sleep, and FEV1/FVC ≥ 70%. If these criteria are met, the pathway assists providers in writing BiPAP orders for discharge.
Results: We collected 40 survey responses. 67.5% of respondents reported being slightly familiar with the diagnostic criteria for OHS, and 75% of providers reported never having been successful prescribing BiPAP on discharge. Educational sessions were held to familiarize providers with OHS and the OHS Pathway. After launching in March 2021, the OHS team convened monthly to optimize the pathway. To date, 20 patients have utilized the pathway.
Conclusion: Pre-intervention results confirm gaps in knowledge and treatment challenges regarding BiPAP therapy for OHS patients. Our preliminary data demonstrate that this is a feasible and reproducible pathway to improve the likelihood of successful initiation of BiPAP therapy on discharge for this high-risk population. A close examination of these cases is required to identify barriers to successful qualification for BiPAP.
Support (If Any):

0778

CHARACTERIZING WOMEN WITH OBSTRUCTIVE SLEEP APNEA FROM REAL WORLD DATA

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ResMed [1]

Introduction: Real-world evidence focused on women with obstructive sleep apnea (OSA) is lacking. This retrospective study aimed to characterize and evaluate the impact of age on female patients with OSA and their journey through OSA diagnosis and treatment.
Methods: De-identified US administrative claims data for patients with OSA who had a claim for a sleep test were used for this analysis. Age and insurance coverage were characterized at the time of the first sleep test. Comorbidity status was evaluated in the year prior to the sleep test by assessing ICD-9/10 codes associated with healthcare encounters. This protocol was submitted to an Institutional Review Board and was determined to be exempt from oversight.
Results: The study included 883,902 female OSA patients; mean age of 51.7 years; and 64.9% commercial, 24.7% Medicaid, and 10.3% Medicare Advantage insurance coverage. The most prevalent comorbidities were hypertension (54.9%), hyperlipidemia (46.5%), GERD (31.5%), type 2 diabetes (25.1%), depression (23.2%), and asthma (22.0%). When stratifying by age, the prevalence of all comorbidities increased with age except for affective disorders. Depression and anxiety decreased with age. In terms of the type of sleep test used to diagnose OSA, 58.8% had an in-lab polysomnography (PSG), 38.9% had a home sleep test (HST), and 2.3% had both a PSG and HST. About half (56.6%) of patients received a positive airway pressure (PAP) device in the year after being diagnosed. When stratifying the results by age, in-lab PSG testing was more prevalent in those over 65, while the percentage of those receiving a PAP device increased then slightly decreased with age (18-44y: 47.6%, 45-54y: 58.1%, 55-64y: 62.1%, 65-69y: 61.1%, >70y: 58.8%).
Conclusion: This retrospective study characterized the start of the women's journey with OSA; describing the rates of sleep testing and PAP treatment from a sample of real-world data. These results begin to build an understanding of these patients and their journey to treatment, helping to raise awareness of undiagnosed OSA in women. Further research should be conducted to identify potential real-world impact of adherence to PAP on health outcomes.
Support (If Any): ResMed

0779

DESCRIBING THE OSA PATIENT JOURNEY FROM TESTING TO PAP TREATMENT

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Introduction: Patients diagnosed with obstructive sleep apnea (OSA) and prescribed positive airway pressure (PAP) therapy for treatment may have differences in experience based on insurance provider, sex, age, or comorbidity status. This retrospective, real-world analysis investigated the factors that impact the patient's OSA journey from initial sleep test to starting PAP therapy.
Methods: De-identified US administrative claims data for patients with OSA who had a claim for a sleep test were used for this analysis. Age, sex, and insurance coverage were characterized at the