position between early and late pregnancy (p=0.04) with a reduction in supine sleep (51.6% to 30.2%) and an increase in left lateral sleep (24.6% to 37.3%). Only in the third trimester, there was a significant positive correlation between time spent supine and oxygen desaturation index (r=0.22, p=0.01), and a trend toward positive correlation with respiratory event index (r=0.15, p=0.08).
Conclusion: Going-to-bed position predicts predominant sleep position in less than half of women with overweight and obesity. Time spent supine in late pregnancy correlates with measures of sleep-disordered breathing. More prospective studies are needed to evaluate the potential for sleep position changes over time as a potentially modifiable risk factor for maternal and neonatal health outcomes.
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0714

POPULATION-LEVEL SNORING AND PROBABLE SLEEP-DISORDERED BREATHING ASSOCIATED WITH GREATER SEDENTARY ACTIVITY

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Introduction: Increased frequency of snoring can be an indicator of sleep-disordered breathing, which is associated with a myriad of comorbidities, including increased cardiovascular disease risk. Previous studies have shown that sleep-disordered breathing is associated with less physical activity, but few studies examined this at the population lavel, or relative to primary snoring.
Methods: This analysis used a linear regression analysis on the 2017- March 2020 data collected from the National Health and Nutrition Examination Survey (NHANES) to explore the relationship between the minutes of sedentary activity and the frequency of snoring. Participants were asked how often they snored in the last 12 months. Responses were categorized as "Never", "Rarely-- 1-2 nights/week", "Occasionally-- 3-4 nights/week", or "Frequently-- >=5 nights/week." Self-reported sedentary activity was measured in minutes during a typical day. A modified STOP-BANG score was created based on NHANES measures of snoring, daytime tiredness, snorting/gasping during sleep, hypertension, body mass index, age, and gender (no measure of neck circumference). Reported results were unweighted; weighted results forthcoming.
Results: Significant unadjusted results indicate that those who reported snoring frequently had 19.2 minutes more sedentary time ([7.98,30.4], p<0.0001); and those with estimated sleep apnea had 16.2 more minutes of sedentary time than those without sleep apnea ([7.19,25.2], p<0.001). When adjusted for sex, age, race, education level, and marital status, the estimated difference between frequent snorers and those that reported never snoring increased to 35.9 minutes of more sedentary activity ([24.4,47.3], p<0.0001) a day. After adjusting for covariates, those with probable sleep apnea showed 43.9 more minutes of sedentary activity compared to those without sleep apnea ([34.1,53.6], p<0.001).
Conclusion: Overall, those who snore frequently (5 or more nights a week) or have a high risk of sleep apnea show a larger number of sedentary minutes per day then those that don't snore or have probable sleep apnea. These relationships may be bidirectional, and directionality should be addressed in future studies.
Support (If Any):

0715

DIAGNOSIS OF SLEEP DISORDERED BREATHING IN PATIENTS WITH INTERSTITIAL LUNG DISEASE: A RETROSPECTIVE EVALUATION OF POLYSOMNOGRAM AND HOME SLEEP APNEA TESTING USING PERIPHERAL ARTERIAL TONOMETRY

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Introduction: Previous studies have shown that sleep disordered breathing (SDB) is common in patients with Interstitial Lung Disease (ILD), and oximetry is often used for screening prior to further diagnostic testing. Current guidelines recommend polysomnography (PSG) for diagnosis of SDB in patients with significant pulmonary disease, however, home sleep apnea tests (HSAT) are increasingly used in clinical practice for a variety of reasons despite lack of evidence regarding accuracy in this population. In this study, we evaluate the correlation between screening oximetry, a commercial brand HSAT (WatchPAT®) and PSG to examine the diagnostic accuracy of this HSAT technology in patients with ILD.
Methods: The institution electronic medical record was screened for patients with a diagnosis code for ILD who underwent screening oximetry followed by PSG or HSAT using peripheral arterial tonometry from July 1, 2012 to present. Clinical review confirmed presence of ILD according to American Thoracic Society guidelines. Among the respective cohorts, Paired Wilcoxon Test was used to compare the oximetry 4% oxygen desaturation index (ODI) to the HSAT ODI and PSG apnea-hypopnea index (AHI) as well as percent time spent below oxyhemoglobin saturation of 89%. Spearman correlation was used to correlate the oximetry ODI and parameters of SDB on HSAT and PSG.
Results: Data was analyzed for 25 patients who had undergone oximetry/HSAT and for 25 patients who had undergone oximetry/PSG. Oximetry ODI showed no significant difference from PSG AHI (p = 0.2635) or between HSAT ODI (p = 0.0755), and no difference was seen in hypoxic time between oximetry and PSG (p = 0.9789). Hypoxic time on HSAT was significantly longer than that on oximetry (p < 0.001). Using HSAT ODI as the standard, HSAT AHI and respiratory disturbance index (RDI) showed rs of 0.9638 and 0.8913 respectively, while oximetry ODI was 0.3893. Compared to PSG AHI, the PSG RDI and oximetry ODI rs were 0.9759 and 0.7407 respectively.
Conclusion: Among patients with ILD, screening oximetry appears to correlate more strongly with indices of SDB and hypoxic time on PSG rather than HSAT. Further studies are warranted to evaluate efficacy of additional HSAT testing modalities in this patient population.
Support (If Any):

0716

RISK FOR HEART FAILURE WITH PRESERVED EJECTION FRACTION IN PATIENTS WITH OR WITHOUT OBSTRUCTIVE SLEEP APNEA

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Introduction: Approximately two out of three patients with Heart Failure with preserved Ejection Fraction (HFpEF) have co-morbid sleep apnea, but the risk of HFpEF in patients who test positive for obstructive sleep apnea (OSA) is unknown.

Methods: Referred subjects (n=228) over the age of 18 underwent a diagnostic in-lab polysomnogram at the University of Michigan Sleep Laboratories between 1/8/2019-3/11/2020 and an echocardiogram within 12 months of their sleep study. Individuals with a known history of HFpEF were excluded (n=44). OSA was defined as an apnea-hypopnea-index (AHI) ≥ 5/hour. Clinical and echocardiogram variables were abstracted from the electronic medical record and used to determine H2FPEF scores (ordinal scale, range 0-9). The H2FPEF score is a validated predictor of HFpEF risk in patients with dyspnea. In the presence of dyspnea, a H2FPEF score ≥ 3 indicates a >50% risk of HFpEF, though dyspnea was not assessed in this study. HFpEF probability (continuous variable) was determined using the corresponding online calculator. Linear regression was used to predict HFpEF probability based on AHI.
Results: The 184 subjects without a known diagnosis of HFpEF had a median age of 65 years (interquartile range (IQR) 51, 71). Seventy subjects (38%) were male, 150 (82%) had OSA, and the median AHI was 15 (7, 35). The median H2FPEF score was 3 (2, 5). Among 34 participants without OSA, 10 (29%) had an H2FPEF score ≥ 3, whereas among 150 participants with OSA, 59 (39%) had an H2FPEF score ≥ 3. Linear regression indicated that higher AHI is associated with a higher probability of HFpEF ($\beta = 0.39$, $p=0.0001$).
Conclusion: Many patients referred for polysomnography may be at high risk for HFpEF. Sleep-study-referred subjects without clinically-indicated echocardiograms were not assessed, but patients at sleep disorders centers who test positive for OSA may have a particularly high rate of undiagnosed HFpEF. Sleep physicians should consider a cardiology referral in appropriately screened patients.
Support (If Any):

0717

OBSTRUCTIVE SLEEP APNEA SYMPTOM SUBTYPE TRANSITIONS OVER FIVE YEARS ARE ASSOCIATED WITH INCREASED CARDIOVASCULAR DISEASE INCIDENCE RISK

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Introduction: Efforts to characterize clinical heterogeneity of obstructive sleep apnea (OSA) resulted in the identification and replication of symptom-based subtypes. Individuals with moderate-severe OSA that are excessively sleepy are at increased risk of cardiovascular disease (CVD). There is limited evidence about whether OSA patients that worsen their symptom presentation over time are at increased cardiovascular burden. This study aimed to assess the association between five-year transitions among OSA symptom subtypes and incidence of CVD in a community-based cohort.
Methods: Participants of the Sleep Heart Health Study with complete baseline and 5-year follow-up data on symptom presentation, polysomnographic data and CVD outcomes were included (N=2,643). We used latent transition analysis on 14 symptom items to determine symptom subtype transitions in participants diagnosed with OSA (apnea-hypopnea index [AHI]≥5) across both visits. The primary outcome was incidence of CVD, defined as first occurrence of a composite of coronary heart disease, heart failure or stroke after the follow-up visit (median CV follow-up: 6.7 years). Cox proportional hazards models were used to assess the association between symptom subtype transitions and CVD incidence, adjusted by relevant demographic and cardiovascular risk factors.
Results: Four OSA symptom subtypes were identified at baseline and follow-up visits: minimally symptomatic, disturbed sleep, moderately sleepy and excessively sleepy. When compared to participants without OSA at baseline and follow-up visits, those with OSA that transitioned from moderately sleepy to excessively sleepy had increased CVD incidence risk (HR=2.09; 95%CI=1.27-3.45; p=0.004), independent of other CV risk factors. Increased CVD incidence risk was also observed in participants who transitioned from moderately sleepy to excessively sleepy when compared to those that remained moderately sleepy (HR=2.02; 95%CI=1.20-3.40; p=0.008) and in participants who transitioned from disturbed sleep to excessively sleepy when compared to those that remained with disturbed sleep (HR=3.25; 95%CI=1.03-10.23; p=0.044).
Conclusion: Five-year transitions across OSA symptom subtypes are associated with increased CVD incidence risk when adjusted by other relevant cardiovascular risk factors. Participants that transitioned from moderately sleepy or from disturbed sleep to excessively sleepy were at higher CVD risk. Results of this study might inform the role of symptom progression on CVD risk in OSA.
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0718

IS THERE A WAY TO PREDICT ABNORMAL POLYSOMNOGRAPHY FOLLOWING A NEGATIVE HOME SLEEP APNEA TEST?

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Introduction: Obstructive sleep apnea (OSA) is characterized by recurrent episodes of obstruction of the upper airway that cause decreased or absent breathing during sleep. An OSA diagnosis is made when the patient experiences recurrent episodes of partial or complete collapse of the upper airway during sleep, which results in apneas or hypopneas, respectively. Polysomnography (PSG) is the gold standard test for diagnosis. HSATs (Home Sleep Apnea Tests) are types of sleep tests that can be conducted in a patient's home to detect obstructive sleep apnea. These tests are becoming increasingly common due to their affordability and convenience. Currently, an in-lab PSG is recommended if the initial HSAT is negative and there is a high clinical suspicion of OSA. Aim of this study is to identify a predictive component of negative HSAT which in turn shows positive PSG.
Methods: We reviewed 50 electronic medical records of patients who underwent an HSAT followed by an in-lab PSG at our Sleep Disorders Center. Patient demographics, comorbidities, HSAT data and PSG data were analyzed. Chi-square test and independent sample t-test were used to compare groups. Predictors of the negative PGA was assessed with Logistic regression. Statistical analysis was performed using Statistical Package of Social Science (SPSS) for Windows, version 15.0 (SPSS Inc, Chicago, IL). A p value <0.05 was considered as statistically significant.
Results: There was no correlation between age, gender, body mass index, comorbidities, and lowest oxygen level in HSAT to predict the result of following PSG.
Conclusion: The results of this study showed no statistically significant predictor in patients who underwent an HSAT followed by an in-lab PSG, although there seems to be a weak correlation between the lowest oxygen levels in HSAT and positive PSG. The