in %CPAP usage>4hrs (73±31% [Tele] vs 73±37%, p=0.73), ESS, PSQ, or Ped-QOL.
Conclusion: In our cohort, children with OSA had no significant changes in CPAP adherence, sleepiness, or OSA symptoms during the COVID-19 pandemic. CPAP telehealth visits provided the same effectiveness as in-person visits, as evidenced by similar adherences and outcome metrics. Interestingly, patients reported higher psychosocial health during the pandemic despite no difference in CPAP adherence. Factors not related to OSA management may contribute to the improvement of quality of life in this population.
Support (If Any): Cincinnati Children's Research Fund

0526

UTILITY OF POLYSOMNOGRAPHY IN TRACHEOSTOMY DECANNULATION PROCESS IN CHILDREN.

Neepa Gurbani[1], Phillip Knollman[2], Christine Heubi[2], Guixia Huang[2], Md Hossain[2], Narong Simakajornboon[2]
Cincinnati Childrens Hospital Medical Center [1] Cincinnati Children's Hospital Medical Center [2]

Introduction: Different approaches have been used to assess decannulation readiness including clinical observation with gradual tracheostomy downsizing, capping, and microlaryngoscopy and bronchoscopy. Polysomnograms with tracheostomy capping are being used at some centers prior to decannulation. We have previously shown that polysomnography is an important additional tool to predict successful decannulation. However, this study was based on a relatively small number of children. Thus the aim of this study is to review the polysomnographic features that predict decannulation outcomes in a large cohort of children with various conditions.
Methods: A retrospective chart review of polysomnography and medical records was performed for children 0-18 years of age preparing for tracheostomy decannulation from Feb. 2005 to June 2019 at Cincinnati Children's Hospital Medical Center. Subjects with less than four hours of sleep time were excluded from the study.
Results: A total of 128 subjects were included in the study with 74 in the successful decannulation group (SD), 48 in the no decannulation group (ND) and 6 in the unsuccessful decannulation group. Underlying diagnosis included history of prematurity 41 (32%), genetic disorders 39 (30.5%), neurological disorders 17 (13.3%), airway abnormalities 108 (84.4%), and cardiac disease 24 (18.8%). Average age at the time of tracheostomy was 1.8±3.4 years and at decannulation was 5.7±3.6 years in the SD group. Favorable microlaryngoscopy/bronchoscopy (MLB) was significantly higher in SD group 73.8% vs. ND group 26.2% ($p<0.001$). Comparing polysomnographic respiratory sleep parameters showed significant differences between ND and SD groups for apnea hypopnea index (AHI)>10/h (88% [ND] vs. 12% [SD]; $p<0.001$) and obstructive apnea hypopnea index (OAHI)> 5/h (75.6% [ND] vs. 24.4% [SD]; $p<0.001$). Alveolar hypoventilation (CO_2>50 for >25% of TST) was also significantly higher in the ND group (70.6%) vs. SD group (29.4%) ($p<0.009$).
Conclusion: In our large cohort of children undergoing decannulation, there were several differences in polysomnographic characteristics including AHI, obstructive AHI and CO_2 parameters between those who were and were not successfully decannulated. In addition to unfavorable findings on airway evaluation, children who did not undergo decannulation were more likely to have moderate to severe degree of sleep disordered breathing and alveolar hypoventilation.
Support (If Any): This study was supported by Cincinnati Children's Hospital Research Fund.

0527

REASONS FOR EARLY POLYSOMNOGRAPHY TERMINATION IN PEDIATRIC PATIENTS WITH SLEEP-DISORDERED BREATHING

Shan Luong[1], Marilyn Culp[1], Michelle Caraballo[1], Anna Wani[1]
UT Southwestern Medical Center at Dallas [1]

Introduction: Many children with possible obstructive sleep apnea remain unidentified due to low referral rate. Out of the patients who successfully get referred, scheduled, and show up to their polysomnography (PSG), a proportion fail to complete the study. Our focus is to explore what factors can lead to early PSG termination in hopes of proactively identifying the at-risk groups and implementing strategies in the future to help bridge the gap between scheduled and completed studies.
Methods: The sleep lab at the Pediatric Sleep Center at UT Southwestern Medical Center includes 20 pediatric beds across two sites, with >4000 pediatric sleep studies run per year. We retrospectively reviewed all studies from January 1, 2017 through December 31, 2019 that were terminated before study completion. We investigated reasons for early termination in each case and gathered patient characteristics such as age, gender, presence of neurocognitive impairment, payor status to identify predictors of unsuccessful studies. We also looked at variability in time of year and testing sites in early study termination.
Results: From the data review of 138 patients, we identified the 3 main reasons for termination to be intolerance to equipment (n=65), acute illness (n=45), or refusal by parent (n=28). There was a greater proportion of patients who terminated due to illness, relative to the other two reasons, in the winter ($p = 0.01$ refusal by parent; $p = 0.02$ intolerance to equipment) and a lesser percentage in the summer ($p = 0.003$ refusal by parent; $p < 0.001$ intolerance to equipment). There was a greater proportion of subjects who were neurocognitively impaired that terminated due to intolerance to equipment relative to those that terminated due to illness ($p = 0.002$).
Conclusion: In our retrospective analysis of the three main reasons for early PSG termination, we did not notice any difference between location sites, age groups, or payor status. In the future, efforts to prevent underutilization of the lab should focus on illness screening especially in the summer and winter as well as development of tools to assess tolerance especially in the neurologically impaired.
Support (If Any):