OSA. OSA severity was associated with increased rates of failure to thrive ($p < 0.01$), aspiration ($p = 0.005$), G-tube feeding ($p = 0.025$), and pulmonary hypertension ($p = 0.005$). Most patients (n=178, 79%) required multiple interventions to manage their OSA.
Conclusion: In this cohort of infants and young children with DS who underwent PSG, a majority had moderate to severe OSA. The pervasiveness of severe disease in young infants suggests that current surveillance guidelines are inadequate. Infants should be evaluated with PSG in the first month of life regardless of clinical symptoms. Further study is needed to prospectively evaluate the impact of early diagnosis and intervention on long term outcomes.
Support (If Any):

0519

SLEEP DYSFUNCTION IN RETT SYNDROME

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Introduction: Rett syndrome (RTT) is an X-linked neurodevelopmental disorder affecting females and is linked to mutations in the methyl-CpG-binding protein 2 (MeCP2) gene. Typical comorbidities in RTT include poor growth, feeding difficulties, hyperventilation and breath-holding, seizures, scoliosis, and disrupted sleep. A few studies indicate sleep disruption in patients with RTT yet there is minimal data on polysomnographic findings in this population. We reviewed our cohort of Rett syndrome patients who underwent polysomnography.
Methods: This retrospective case control of 10 RTT subjects (mean age, 11.19 years; ranged from 1 to 33 years) underwent standard polysomnography (PSG) recording. Subjects were compared to 10 age and gender matched controls with an AHI <5 and no chronic medical problems using a student paired t test. All studies were scored using the AASM criteria.
Results: We found our cohort to have increased N3% sleep, decreased N2%, and shorter sleep onset latency ($p< 0.05$). Trends of lower BMI, lower oxygen saturation, and shorter REM latency ($p < 0.10$ but > 0.05). Review of PSGs shows the slow wave have morphological of typical slow waves and not that of the slowing seen on wake EEG nor the epileptiform activity. 4 of the 10 PSGs are notable for frequent interictal epileptiform discharges. 2 of the 10 subjects had a central apnea index >5, 2 had an AHI >5 and 1 demonstrated hypoventilation. There were central apneas associated with hyperventilation during awake and sleep-awake transition.
Conclusion: Our cohort of RTT patients demonstrates differences in sleep architecture, manifested most notably by a high percentage of SWS. This population has high amplitude rhythmic slow (theta) activity on wake EEG, primarily in the frontal-central regions. This slowing was distinct from the epileptiform activity seen in 40% of our cohort. Central apnea also appeared in older patients and the very young. Larger population studies are needed for future research.
Support (If Any):

0520

EFFECT OF SLEEP DISORDERED BREATHING ON CONTROL AND SEVERITY OF ASTHMA ON PEDIATRIC POPULATION

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Introduction: Pediatric sleep disordered breathing (SDB) can co-exist with asthma, affecting its control and severity, adding to the overall health care burden. Our aim was to determine the association of SDB with control and severity of asthma, and to evaluate any concomitant risk factors associated with both.
Methods: Based on the Sleep-Related Breathing Disorder scale extracted from the Pediatric Sleep Questionnaire (SDBS-PSQ), children (5 – 15 years) with persistent asthma were classified as: with SDB (SDBS-PSQ ≥ 0.33) and without SDB, in a cross – sectional study. Characteristics like age, gender, body mass index and spirometry were compared. Control of asthma was categorized into well-controlled, not-well, and poorly controlled using childhood – asthma control test (c-ACT ≥20, 12-19 and ≤12, respectively). Correlation between SDBS-PSQ and c-ACT was analysed. Correlation of risk factors like adeno-tonsillar hypertrophy, gastroesophageal reflux disease, obesity and allergic rhinitis (AR) with presence of SDB in asthma was also assessed.
Results: Among sixty asthmatics, mild, moderate, and severe persistent asthma was observed in 26.67%, 40% and 33.33%, respectively. 18.33% asthmatics had risk for SDB (mean SDBS-PSQ of 0.45 ± 0.11 vs 0.07 ± 0.07 in those without SDB, $p<0.001$). Baseline and spirometric characteristics were similar in both groups. Asthmatics with SDB had higher rates of severe persistent (63.6% vs 26.5%, $p = 0.018$) and uncontrolled asthma (100% vs 30.6%, $p<0.001$), and a lower mean c–ACT score (14.45 ± 3.20 vs 20.04 ± 4.56, $p<0.001$) compared to asthmatics without SDB. Amongst asthmatics with SDB, mean SDBS-PSQ score was higher in not-well and poorly controlled asthmatics (0.41 ± 0.07 vs 0.12 ± 0.08, $p <0.001$ and 0.58 ± 0.08 vs 0.01 ± 0.07, $p<0.001$; respectively), compared to those without SDB. Negative correlation was confirmed between c-ACT and SDBS-PSQ scores ($p<0.001$, $r2 = 0.36$). Only AR was associated with SDB ($p = 0.001$, correlation coefficient <0.001).
Conclusion: Control and severity of asthma is adversely affected by SDB, independent of other risk factors. AR can increase the risk of SDB in asthmatic children, further affecting the control. Therefore, children with severe and difficult-to-control asthma should be screened for SDB using objective questionnaires like SDBS-PSQ.
Support (If Any): Nil