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Sleep Watchers

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Dear Colleague,

We hope this quarter's newsletter finds everyone in good health and spirits. As always we genuinely appreciate your support and look forward to continuing to help you improve the quality of life for your patients.

Please let us know if you would like to see a specific topic covered in our next issue. It is our goal to provide as much information as possible to better serve your patients. We appreciate the trust you place in us by allowing us to participate in the care of your patients.

Best Regards,

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Indiana Sleep Center

Obstructive Sleep Apnea Treatment and Dementia Risk in Older Adults

G L Dunietz, R D Chervin, et al.
Sleep 2021 Mar 26

The purpose of this study was to examine associations between PAP therapy, adherence and incident diagnoses of Alzheimer's disease (AD), mild cognitive impairment (MCI), and dementia not-otherwise-specified (DNOS) in older adults. This retrospective study utilized Medicare 5% fee-for-service claims data of 53,321 beneficiaries, aged 65+, with an OSA diagnosis prior to 2011. Study participants were evaluated using ICD-9 codes for neurocognitive syndromes [AD(n=1,057), DNOS(n=378), and MCI(n=443)] that were newly-identified between 2011-2013. PAP treatment was defined as presence of ≥1 durable medical equipment (HCPCS) code for PAP supplies. PAP adherence was defined as ≥2 HCPCS codes for PAP equipment, separated by≥1 month. Statistical models, adjusted for demographic and health characteristics, were used to estimate associations between PAP treatment or adherence and new AD, DNOS, and MCI diagnoses.

In this sample of Medicare beneficiaries with OSA, 59% were men, 90% were non-Hispanic whites and 62% were younger than 75y. The majority (78%) of beneficiaries with OSA were prescribed PAP (treated), and 74% showed evidence of adherent PAP use. In adjusted models, PAP treatment was associated with lower odds of incident diagnoses of AD and DNOS (OR=0.78, and OR=0.69). Lower odds of MCI, approaching statistical significance, were also observed among PAP users (OR=0.82). PAP adherence was associated with lower odds of incident diagnoses of AD (OR=0.65). PAP treatment and adherence are independently associated with lower odds of incident AD diagnoses in older adults. *The investigators in this study suggest that treatment of OSA may reduce risk of subsequent dementia.*

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Prevalence of Sleep-disordered Breathing after Stroke and TIA

Andrea Seiler, Millene Camilo, et al.
Neurology 2020 Feb 12;92(7):648-654

The purpose of this study was to perform a review and statistical analysis on the prevalence of sleep-disordered breathing (SDB) after stroke The authors searched the literature for clinical studies reporting prevalence and/or severity of SDB after stroke or TIA. Only sleep apnea tests performed with full polysomnography and diagnostic devices of the American Academy of Sleep Medicine categories I-IV were included.

The initial search identified 5,211 publications. Eighty-nine studies (including 7,096 patients) met inclusion criteria. Fifty-four studies were

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Stroke and TIA...*continued*

performed in the acute phase after stroke (after less than 1 month), 23 studies in the subacute phase (after 1-3 months), and 12 studies in the chronic phase (after more than 3 months). Mean apnea-hypopnea index was 26.0/h. Prevalence of SDB with apnea-hypopnea index greater than 5/h and greater than 30/h was found in 71% and 30% of patients, respectively. Severity and prevalence of SDB were similar in all examined phases after stroke, irrespective of the type of sleep apnea test performed. Heterogeneity between studies was mostly high. *The authors conclude that the high prevalence of SDB after stroke and TIA, which persists over time, is important in light of recent studies reporting the (1) feasibility and (2) efficacy of SDB treatment in this clinical setting.*

Impact of Untreated Obstructive Sleep Apnea on Left and Right Ventricular Myocardial Function and Effects of CPAP Therapy

Christoph Hammerstring, Robert Schueler, et al.
PLoS One 2013 Oct 11;8(10):e76352

Obstructive sleep apnea (OSA) has deteriorating effect on LV function, whereas its impact on RV function is controversial. The authors attempted to determine the effect of OSA and continuous positive airway pressure (CPAP) treatment on left and right ventricular (LV, RV) function using transthoracic echocardiography (TTE) and 2 dimensional speckle tracking (2D ST) analysis of RV deformation capability.

82 patients with OSA and need for CPAP therapy were prospectively enrolled and underwent TTE at study inclusion and after 6 months of follow up (FU). Statistical analysis revealed an independent association between baseline apical right ventricular longitudinal strain (RV-SI), BMI and the severity of OSA (apical RV-SI: BMI). After CPAP therapy, LV functional parameters (LVEF:, LV performance index, stroke volume), and apical RV-SI improved significantly. The effect of CPAP therapy was related to severity of OSA. OSA seems to have deteriorating effect on LV and RV function. *The authors found a beneficial effect of CPAP on LV and RV functional parameters predominately in patients with severe OSA. 2D speckle tracking might be of value to determine early changes in global and regional right ventricular function.*

Sleep Terrors

Alexander Leung, Amy Leung, et al.
Curr Pediatr Rev 2020;16(3):176-182

Sleep terrors are common, frightening, but fortunately benign events. Familiarity with this condition is important so that an accurate diagnosis can be made. The purpose of this article was to familiarize physicians with the clinical manifestations, diagnosis, and management of children with sleep terrors. A PubMed search was completed in Clinical Queries using the key terms "sleep terrors" OR "night terrors". It is estimated that sleep terrors occur in 1 to 6.5% of children 1 to 12 years of age. Sleep terrors typically occur in children between 4 and 12 years of age, with a peak between 5 and 7 years of age. The exact etiology is not known. Developmental, environmental, organic, psychological, and genetic factors have been identified as a potential cause of sleep terrors. Sleep terrors tend to occur within the first three hours of the major sleep episode, during arousal from stage three or four non-rapid eye movement (NREM) sleep.

In a typical attack, the child awakens abruptly from sleep, sits upright in bed or jumps out of bed, screams in terror and intense fear, is panicky, and has a frightened expression. The child is confused and incoherent: verbalization is generally present but disorganized. Autonomic hyperactivity is manifested by tachycardia, tachypnea, diaphoresis, flushed face, dilated pupils, agitation, tremulousness, and increased muscle tone. The child is difficult to arouse and console and may express feelings of anxiety or doom. In the majority of cases, the patient does not awaken fully and settles back to quiet and deep sleep. There is retrograde amnesia for the attack the following morning. Attempts to interrupt a sleep terror episode should be avoided. As sleep deprivation can predispose to sleep terrors, it is important that the child has good sleep hygiene and an appropriate sleeping environment.

Medical intervention is usually not necessary, but clonazepam may be considered on a short-term basis at bedtime if sleep terrors are frequent and severe or are associated with functional impairment, such as fatigue, daytime sleepiness, and distress. Anticipatory awakening, performed approximately half an hour before the child is most likely to experience a sleep terror episode, is often effective for the treatment of frequently occurring sleep terrors. *Most children outgrow the disorder by late adolescence. In the majority of cases, there is no specific treatment other than reassurance and parental education. Underlying conditions, however, should be treated if possible and precipitating factors should be avoided.*

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