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Commentary

Are adolescents sleeping less and worse than before? ☆

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Sleep in adolescents has been receiving increased attention, because of its vital role on mood, daytime functioning, academic performance, overall health and development. The intrinsic changes in sleep architecture and circadian factors, together with other developmental changes in psychosocial aspects as well as the external factors (e.g., increased school workload, excessive media usage) may increase the vulnerability for sleep problems, especially sleep deprivation and insomnia, in adolescents [1,2]. A large body of evidence across different countries consistently demonstrates the pervasiveness of sleep problems in adolescents [3,4]. Indeed, sleep problems in adolescents are not only found to be prevalent but also showing an increasing trend in the past decades, albeit that the existing data is limited and conflicting, particularly among Asian countries [2].

Yoshitaka Kaneita and colleagues investigated the secular trend of sleep patterns and problems including insomnia, late bedtime, and short sleep duration (<7) in Japanese adolescents from 2004 to 2017 [5]. By analyzing a total of 545 285 Japanese adolescents across 6 waves of survey, they noted a decrease in the prevalence of insomnia (Adjusted odds ratio [AOR] 0.85, 95% CI 0.82-0.87), but a reverse trend of increasing prevalence for late bedtime (AOR 1.17, 95% CI 1.12-1.23), shorter sleep duration (AOR 1.13, 95% CI 1.10-1.17) and poor mental health problems during this 13-year study period.

Their study provides encouraging, interesting but also some conflicting findings. For example, there was a decreasing trend of insomnia problems in Japanese adolescents over the study period. However, this observation was inconsistent with the data found in European adolescents as the majority of the countries (28/33) reported a secular trend of increasing prevalence of sleeping difficulties over a similar period of time from 2002 to 2014 [6]. Yoshitaka Kaneita and colleagues speculated that the improvement of insomnia might be possibly due to the introduction of sleep health policy in the schools and the territory-wide promotion of sleep health in the community in Japan. If this was the case, such changes are encouraging because the majority of the previous studies on school-based sleep education programs only suggested a significant improvement in sleep knowledge but little effect on sleep behaviors [7]. It is possible that the translation from knowledge to behavior takes time and a larger scale promotion with continued education in school are necessary to facilitate the sleep-related behavioral changes. Besides school-based promotion, small group intervention with selective focus on vulnerable adolescents might be another approach to promote sleep health in high risk population. Recently, our group have shown that insomnia could be proactively prevented by a 4-week cognitive-behavioral prevention program in high-risk adolescents (those adolescents with a positive family history and subsyndromal insomnia symptoms) [8], indicating the necessity of timely intervention for those who are vulnerable to sleep problems. In this regard, both general sleep education and specific cognitive prevention program are necessary to both general and high-risk population in order to reduce the health care burden of insomnia in the future.

Nevertheless, the study also reported discrepant findings showing an increasing prevalence of later bedtime and shorter sleep duration. If the nationwide sleep education and promotion in Japan could lead to a reduction of sleep problems, we would expect a

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parallel improvement of bedtime and sleep duration in this population. In this regard, we may take a reference from previous studies and suggest some potential but unexplored factors to explain such a discrepancy in Yoshitaka Kaneita and colleagues' study. For example, early school start time and increased screen time are two widely studied factors that could lead to delayed bedtime and sleep deprivation in adolescents [6,9,10]. In addition, some other cultural and environmental factors might also warrant further investigation. For example, a recent population-based study showed that the satellite measured outdoor artificial light at night increases the risk for short sleep, delayed bedtime and poor mental health problems in adolescents [11]. The downwards trends in sleep behaviors, especially later bedtime, in Yoshitaka Kaneita and colleagues' study could possibly be related to negative effects of environmental light pollution as well as the sharp rise of the usage of electronic devices in the past decades. Moreover, different cultural and sociodemographic characteristics might also contribute to the wide variations in sleep patterns. The inconsistent data from various regions suggest that country-level factors could either promote or adversely affect adolescent sleep [4,12]. For example, bed and bedroom sharing in the families are common in the Eastern culture such as Chinese and Korean society, which might have negative effects on children's sleep [13]. It is of note that people in two cities of China, even with similar cultural and ethnicity groups, could show different sleep patterns. Our previous study demonstrated that children in Hong Kong went to bed later and slept approximately 45 minutes less than their counterparts in Shanghai. We also found that Hong Kong children sleep less than 10 years ago, whilst there is a slight increase of sleep duration in Shanghai children from early 2000 to 2010s [3]. The exact causes for the subcultural differences in sleep pattern between these two cities was not clear, different systemic policy change might be a contributing factor because Hong Kong has abolished half-day (afternoon) school and all the children had to attend school in the morning, whereas Shanghai has implemented the policy of delaying school start time in all primary schools.

In order to answer the question "Are adolescents sleeping less and worse than before?", further interdisciplinary work across various regions is necessary to enable researchers to harmonize and gather multi-dimensional data covering cultural, governmental policy especially over schooling and health, environmental and sociodemographic characteristics. The rich and diverse cultural, social, and economic differences among Asian countries would be an ideal starting point for the much-needed study in order to understand the factors and develop potential intervention to improve sleep health in adolescents.

Σχόλιο:

Σε αυτό το άρθρο οι συγγραφείς σχολιάζουν τη μελέτη των Yoshitaka Kaneita et al., εστιάζοντας στον ύπνο κατά την εφηβική ηλικία και τις διαταραχές αυτού από ενδογενείς ή εξωγενείς παράγοντες. Πρόκειται για μελέτη σε 545.285 εφήβους στην Ιαπωνία από το 2004-2016, ενώ ειδική έμφαση γίνεται στην ετερογένεια των αποτελεσμάτων μελετών σε διαφορετικούς πληθυσμούς και ιδίως των Ασιατικών χωρών. Πιο συγκεκριμένα, στη μελέτη αν και ευρέθη μειωμένος επιπολασμός απνίας, ανεδείχθησαν η μειωμένη διάρκεια ύπνου (<7h), η καθυστερημένη ώρα κατάκλισης και η επηρεασμένη νοητική υγεία των εφήβων.

Προσπαθώντας να ερμηνεύσουν την αντίφαση μεταξύ των ανωτέρω αποτελεσμάτων, βασιζόμενοι σε προηγούμενες μελέτες, αναφέρονται στην ενδοσχολική εφαρμογή προγραμμάτων εκπαίδευσης συμπεριφορικής ύπνου και παρέμβασης σε εφήβους υψηλού κινδύνου, που θα μπορούσαν να βελτιώσουν τα ποσοστά απνίας. Ωστόσο, η έναρξη του σχολικού ωραρίου νωρίς το πρωί, ο αυξημένος χρόνος μπροστά σε οθόνες ηλεκτρονικών συσκευών, σε συνδυασμό με περιβαλλοντικούς και πολιτισμικούς παράγοντες αποτελούν μεταβλητές της ετερογένειας των αποτελεσμάτων μεταξύ των μελετών. Καλύτερα δομημένες μελέτες που να συγκεντρώνουν τις παραπάνω πληροφορίες θα δώσουν ακριβέστερες απαντήσεις σε αυτό το σύγχρονο πρόβλημα.

Declaration of Competing Interest

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CORRECTED PROOF

Sleep profile predicts the cognitive decline of mild-moderate Alzheimer's disease patients

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Abstract

Study Objectives

To investigate the association between sleep and cognitive decline of patients with mild-moderate Alzheimer's disease.

Methods

Observational, prospective study, including consecutive patients diagnosed with mild-moderate Alzheimer's disease. Cerebrospinal fluid was collected for amyloid-beta, total-tau, and phospho-tau levels determination. Also, overnight polysomnography was performed, followed by neuropsychological evaluations at baseline and after 12 months of follow-up. Principal component analysis revealed two profiles of patients in terms of sleep: one with a propensity to deepen the sleep (deep sleepers) and the other with a propensity to spend most of the time in the lighter sleep stage (light sleepers).

Results

The cohort included 125 patients with a median [IQR] of 75.0 [72.0;80.0] years. Deep and light sleepers did not present differences in relation to the cerebrospinal fluid pathological markers and to the cognitive function at the baseline. However, there was a significant difference of -1.51 (95% CI: -2.43 to -0.59) in the Mini-mental state examination after 12 months of follow-up. Accordingly, sleep depth and cognitive decline presented a dose-response relationship (p -for-trend = 0.02). Similar

outcomes were observed in relation to the processing speed (Stroop words test, p -value = 0.016) and to the executive function (Verbal fluency test, p -value = 0.023).

Conclusions

Considering the increased cognitive decline presented by light sleepers, the sleep profile may have a predictive role in relation to the cognitive function of patients with mild-moderate Alzheimer's disease. The modifiable nature of sleep sets this behavior as a possible useful intervention to prevent a marked cognitive decline.

Clinical Trial Information

Role of Hypoxia and Sleep Fragmentation in Alzheimer's Disease. and Sleep Fragmentation. Completed.
NCT02814045

Keywords: [Alzheimer's disease](#), [sleep depth](#), [cognitive decline](#)

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Σχόλιο:

Ύπνος και Alzheimer

Στην νόσο Alzheimer ο εγκέφαλος καταστρέφεται από την συσσώρευση beta – amyloid protein. Η beta --amyloid protein συσσωρεύεται στον εγκέφαλο και αποχετεύεται κατά τη διάρκεια του ύπνου βραδών κυμάτων. Η εμφάνιση της νόσου Alzheimer έχει συσχετισθεί με την παρουσία περιορισμένου χρόνου ύπνου αλλά και υπνικής άπνοιας.

Στην παρούσα μελέτη συμπεριελήφθησαν ασθενείς με ήπιο – μέτρο Alzheimer και διαιρέθησαν ανάλογα με την πολυπνογραφία τους σε δύο ομάδες, αυτούς που έφταναν σε βαθύ ύπνο (deep sleepers) και αυτούς που είχαν κυρίως ελαφρότερα στάδια ύπνου (light sleepers). Μετά από 12 μήνες η έκπτωση των γνωσιακών λειτουργιών ήταν μεγαλύτερη στους light sleepers. Οι συγγραφείς πιθανολογούν ότι το profile του ύπνου έχει ένα προγνωστικό ρόλο στην πρόοδο του Alzheimer και ότι η τροποποίηση του ύπνου είναι μια πιθανή χρήσιμη παρέμβαση για την πρόληψη της εκσεσημασμένης επιδείνωσης των γνωσιακών λειτουργιών.

Effect of CPAP Therapy on Kidney Function in Patients With Chronic Kidney Disease

A Pilot Randomized Controlled Trial



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BACKGROUND: OSA is common in chronic kidney disease (CKD) and may accelerate a decline in kidney function. It is not clear whether treatment of OSA with CPAP improves kidney function.

RESEARCH QUESTION: Does treatment with CPAP improve kidney function in patients with CKD and coexisting OSA?

STUDY DESIGN AND METHODS: A randomized, controlled, nonblinded, parallel clinical trial was performed of patients with stages 3 and 4 CKD and coexisting OSA comparing the effect of CPAP vs usual care on the estimated glomerular filtration rate (eGFR) and the urine albumin to creatinine ratio (ACR) over 12 months.

RESULTS: Fifty-seven patients were enrolled and 30 were randomized to CPAP. They had moderately severe CKD (eGFR, 38.4 ± 1.5 mL/min/1.73 m²) and significant OSA and nocturnal hypoxemia (oxygen desaturation index: 23.9 events/h; interquartile range [IQR], 20.3 events/h; mean peripheral capillary oxygen saturation: 89.5%; IQR, 1.7%); 60% had baseline albuminuria (ACR, > 3 mg/mmol). No significant difference was found between CPAP and usual care in the change in eGFR and ACR over 12 months. Although some improvement in eGFR occurred with CPAP therapy in patients with a lower risk of CKD progression, this did not reach statistical significance.

INTERPRETATION: Although CPAP did not provide additional renal benefits over usual care in all CKD patients, some evidence suggested that CPAP slowed the decline in eGFR in CKD patients with a lower risk of CKD progression. These preliminary data support the need for larger clinical trials exploring the effects of CPAP on kidney function.

TRIAL REGISTRY: ClinicalTrials.gov; No.: NCT02420184; URL: www.clinicaltrials.gov

CHEST 2021; 159(5):2008-2019

KEY WORDS: chronic kidney disease; CPAP; sleep apnea

FOR EDITORIAL COMMENT, SEE PAGE 1717

ABBREVIATIONS: ACR = albumin to creatinine ratio; AHI = apnea-hypopnea index; AKI = acute kidney injury; CKD = chronic kidney disease; eGFR = estimated glomerular filtration rate; ESS = Epworth Sleepiness Scale; HSAT = home sleep apnea test; IH = intermittent hypoxemia; IQR = interquartile range; ITT = intention-to-treat; PP = per-protocol; ODI = oxygen desaturation index; RAS = renin-angiotensin system

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Institute of Alberta (A. N. Rimke, S. B. Ahmed), and the Alberta Kidney Disease Network (S. B. Ahmed), Calgary, AB, Canada.

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Σχόλιο:

Η αποφρακτική υπνική άπνοια μέσω της διαλείπουσας υποξαιμίας που προκαλεί, έχει συνδεθεί σε μελέτες με ταχύτερη απώλεια της νεφρικής λειτουργίας. Στη μελέτη αυτή περιελήφθησαν 57 ασθενείς με χρόνια νεφρική νόσο σταδίου 3 και 4 και αποφρακτική υπνική άπνοια για διάστημα 12 μηνών. Οι 30 ασθενείς έκαναν και χρήση της CPAP πέραν της συνήθους θεραπείας, ενώ η ομάδα ελέγχου έλαβε τη συνήθη θεραπεία για τη νεφρική νόσο. Η μελέτη δεν έδειξε στατιστικά σημαντική διαφορά με τη χρήση της CPAP στην επιβράδυνση της μείωσης του ρυθμού σπειραματικής διήθησης ή στην αλβουμινουρία. Στους ασθενείς χαμηλού κινδύνου για πρόοδο της νεφρικής νόσου φάνηκε επιβράδυνση της μείωσης στο ρυθμό σπειραματικής διήθησης, χωρίς όμως να αποτελεί στατιστικά σημαντικό αποτέλεσμα. Στους ασθενείς με υψηλό κίνδυνο για πρόοδο της νόσου, η θεραπεία με CPAP δεν έδειξε αποτέλεσμα.

Ο μικρός αριθμός των ασθενών και η μικρή διάρκεια παρακολούθησης αποτελούν περιορισμούς της μελέτης. Αξιοσημείωτο είναι ότι φάνηκε μείωση στο ρυθμό επιδείνωσης της νεφρικής λειτουργίας σε ασθενείς με χαμηλότερο κίνδυνο, γεγονός που ενδεχομένως δείχνει ότι η παρέμβαση με τη χρήση της CPAP θα ήταν πιο χρήσιμη σε πρωιμότερα στάδια της νεφρικής νόσου.

Επιλογή άρθρου – Σχολιασμός: Αθηνά Βλάχου

Physiological sleep measures predict time to 15-year mortality in community adults: Application of a novel machine learning framework

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Redline and Peppard joint senior authors.

Summary

Clarifying whether physiological sleep measures predict mortality could inform risk screening; however, such investigations should account for complex and potentially non-linear relationships among health risk factors. We aimed to establish the predictive utility of polysomnography (PSG)-assessed sleep measures for mortality using a novel permutation random forest (PRF) machine learning framework. Data collected from the years 1995 to present are from the Sleep Heart Health Study (SHHS; $n = 5,734$) and the Wisconsin Sleep Cohort Study (WSCS; $n = 1,015$), and include initial assessments of sleep and health, and up to 15 years of follow-up for all-cause mortality. We applied PRF models to quantify the predictive abilities of 24 measures grouped into five domains: PSG-assessed sleep (four measures), self-reported sleep (three), health (eight), health behaviours (four), and sociodemographic factors (five). A 10-fold repeated internal validation (WSCS and SHHS combined) and external validation (training in SHHS; testing in WSCS) were used to compute unbiased variable importance metrics and associated p values. We observed that health, sociodemographic factors, and PSG-assessed sleep domains predicted mortality using both external validation and repeated internal validation. The PSG-assessed sleep efficiency and the percentage of sleep time with oxygen saturation $<90\%$ were among the most predictive individual measures. Multivariable Cox regression also revealed the PSG-assessed sleep domain to be predictive, with very low sleep efficiency and high hypoxaemia conferring the highest risk. These findings, coupled with the emergence of new low-burden technologies for objectively assessing sleep and overnight oxygen saturation, suggest that consideration of physiological sleep measures may improve risk screening.

Σχολιασμός :

Σε αυτό το πολύ ενδιαφέρον άρθρο , οι συγγραφείς χρησιμοποιούν δεδομένα από 2 μεγάλες σε αριθμό ασθενών και σε διάρκεια παρακολούθησης μελέτες , την Sleep Heart Health Study και την Wisconsin Sleep Cohort Study με 5.734

και 1015 ασθενείς αντίστοιχα , για 15 χρόνια . Χρησιμοποιούν το μοντέλο PRF ώστε να ποσοτικοποιήσουν προβλεπτικές παραμέτρους που αφορούν τον ύπνο (όπως προκύπτει από τις πολυπνογραφίες) , την υγεία, τις συνήθειες ζωής και τα δημογραφικά-κοινωνικά χαρακτηριστικά των ασθενών , αποκλείοντας λάθη μεροληψίας . Αναδεικνύονται ως σημαντικοί παράγοντες κινδύνου τόσο η χαμηλή αποτελεσματικότητα του ύπνου (sleep efficiency) όσο και η σοβαρή υποξαιμία στον ύπνο (χρόνος ύπνου με κορεσμό οξυαιμοσφαιρίνης <90%) , όπως προκύπτουν από την PSG. Οι συγγραφείς προβάλλουν την ανάγκη ανάδειξης τεχνολογιών χαμηλού κόστους που να αξιολογούν αυτές τις παραμέτρους ως screening αντίχνευσης κινδύνου για την μακροπρόθεσμη υγεία .

Γκιζοπούλου Ευαγγελία

Sleep Bruxism

An Integrated Clinical View



Thomas Bornhardt, DDS, MSc*, Veronica Iturriaga, DDS, MSc, PhD

KEYWORDS

• Bruxism • Sleep bruxism • Obstructive sleep apnea • Gastroesophageal reflux • Sleep arousal

KEY POINTS

- Clinically, sleep bruxism presents mainly as teeth grinding associated with rhythmic masticatory muscle activity.
- Sleep bruxism has a strong coexistence with sleep arousal, obstructive sleep apnea, gastroesophageal reflux, and the use or abuse of substances such as alcohol, coffee, tobacco, and some drugs.
- Currently, central pathophysiological factors are considered the most important in the development of sleep bruxism, displacing peripheral factors.

BACKGROUND

Sleep bruxism (SB) is a masticatory muscle activity during sleep, characterized as rhythmic (phasic) or nonrhythmic (tonic) muscle contraction.¹ In adults there is an estimated 8% SB prevalence,^{2,3} whereas in the pediatric population it is 3.4% to 40.6%.⁴ As reported by the International Classification of Sleep Disorders, 3rd edition (ICSD-3) of the American Academy of Sleep Medicine (AASM), SB is classified as a movement disorder during sleep.⁵ However, in the latest international consensus it is proposed that SB occurs in healthy subjects, without a central movement disorder, or with any other sleep disorder.¹ Furthermore, it has been proposed to consider SB as a condition or activity, rather than a disease or risk factor for orofacial structures.^{1,6} Accordingly, and depending on its pathophysiology, SB could be classified as a risk factor, a protective factor, or an innocuous factor.¹

When considering a polysomnographic view point, a rhythmic masticatory muscle activity (RMMA) is seen as a motor manifestation of SB. Such RMMAs are also reported in 59.8% of subjects without SB.⁷ Nevertheless, 90% of subjects with SB present RMMA,^{8–10} and these events are characterized by greater amplitude and frequency,

and may be a severe manifestation of this action.¹¹ A cascade of physiologic events that make up the SB episode itself is described and includes (1) autonomic-cardiac activation, 4 to 8 minutes before RMMA/SB; (2) increase in electroencephalographic (EEG) activity 4 seconds before RMMA/SB; (3) tachycardia 1 second before RMMA/SB; and (4) increase in muscle tone of the suprahyoid muscles 0.8 seconds before RMMA/SB.^{3,12} From a clinical point of view, SB presents mainly as teeth grinding^{11,13} rather than clenching, the latter being closely related to awake bruxism.¹²

Because there is no consensus regarding the etiologic factors of SB, it is currently defined as a multifactorial disease.^{3,14} Two types of risk factors related to SB development have been described, the peripheral risk factors (dental occlusion and orofacial bone anatomy) and the central risk factors (pathophysiological and psychological). While ruling out occlusal components as part of the SB etiology, central factors are currently considered to play a significant role.^{15,16} Likewise, primary psychological aspects and anxiety have for years been the subject of debate. This should, however, be considered carefully because an etiologic relationship has not yet been established.^{2,17–21} The aim of this article was to review the main and clinically relevant pathophysiological risk factors,

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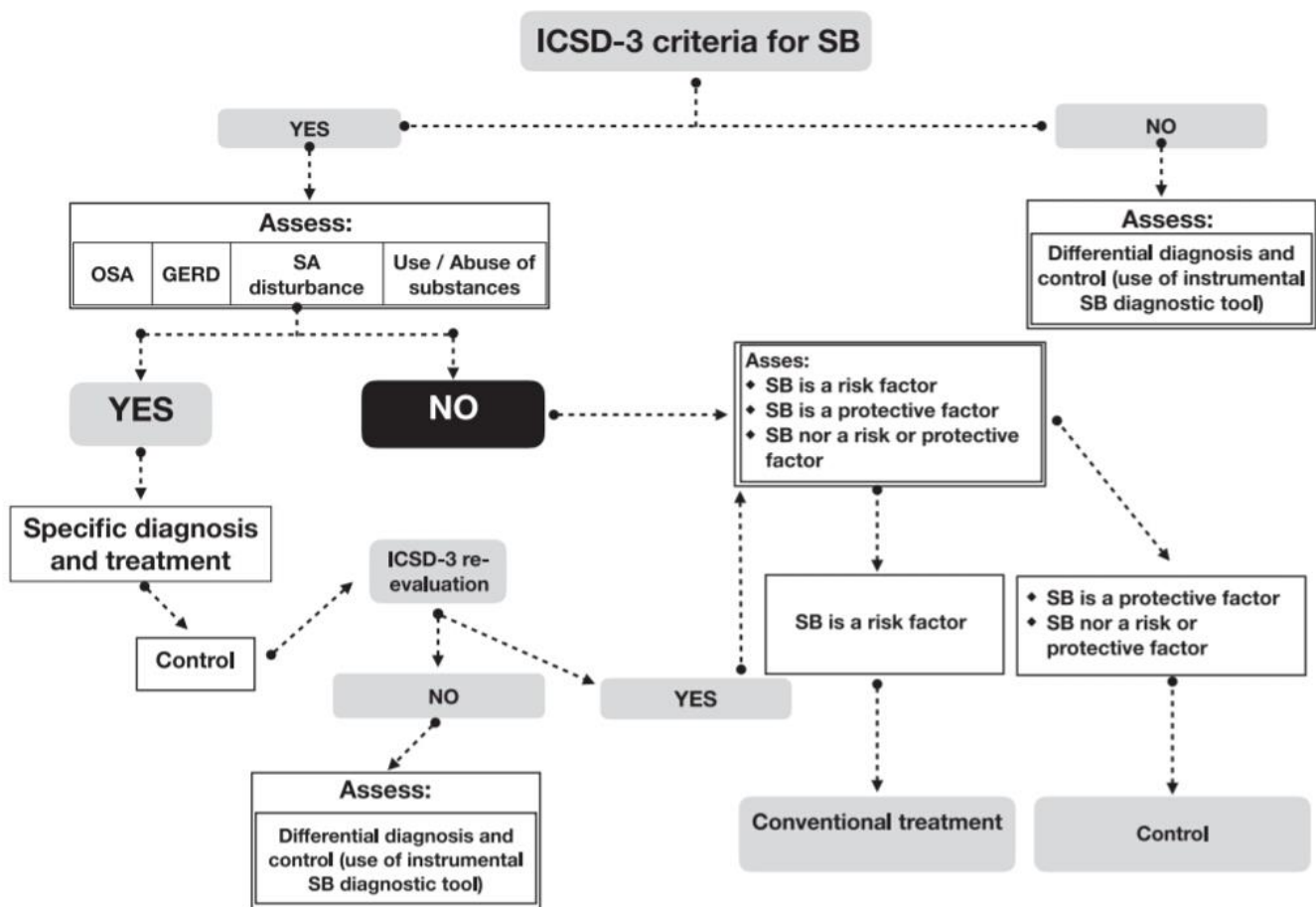
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Σχόλιο:

Η ανασκόπηση αυτή σκοπό έχει να αναλύσει τους κυριότερους παθοφυσιολογικούς μηχανισμούς και σημαντικότερους παράγοντες κινδύνου για την εμφάνιση του βρουξισμού και προτείνει έναν αλγόριθμο για την κλινική προσπέλασή του. Ο βρουξισμός, που περιγράφεται στην ταξινόμηση ICSD-3 ως μια κινητική διαταραχή κατά τον ύπνο, στις τελευταίες διεθνείς θέσεις ομοφωνίας προτείνεται ως μια κατάσταση ή δραστηριότητα -και όχι ως παθολογία ή παράγοντας κινδύνου-, που μπορεί υπό συνθήκες να εμφανίσουν και άτομα χωρίς διαταραχές ύπνου. Στοιχεία δείχνουν ότι αφορά το 8% των ενηλίκων και το 3,4 - 40,6% των παιδιών. Εμφανίζει υψηλή συσχέτιση με arousals, OSA, ΓΟΠ και τη χρήση ή κατάχρηση ουσιών, όπως αλκοόλ, καφεΐνη, καπνού και ορισμένων φαρμάκων.

Επιλογή άρθρου - Σχολιασμός: Αγησίλαος Δέρβας

The Impact of Cognitive-Behavioral Interventions on Sleep Disturbance in Depressed and Anxious Community-dwelling Older Adults: A Systematic Review

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ABSTRACT

Introduction: Depression and anxiety are prevalent mental health conditions in older adulthood. Despite sleep disturbance being a common comorbidity in late-life depression and anxiety, it is often discounted as a target for treatment. The current review aims to establish whether cognitive-behavioral therapy (CBT) is effective in treating concomitant sleep disturbance in depressed and anxious older adults and to review evidence supporting whether CBT interventions targeting anxiety and depression, or concurrent sleep disturbance, have the greatest effectiveness in this client group.

Method: A systematic database search was conducted to identify primary research papers evaluating the effectiveness of CBT interventions, recruiting older adults with symptoms of depression and/or anxiety, and employing a validated measure of sleep disturbance. The identified papers were included in a narrative synthesis of the literature.

Results: Eleven identified studies consistently support reductions in sleep disturbance in elderly participants with depression and anxiety in response to CBT. Most CBT interventions in the review included techniques specifically targeting sleep, and only one study directly compared CBT for insomnia (CBT-I) with a CBT-I intervention also targeting depressive symptoms, limiting the ability of the review to comment on whether interventions targeting sleep disturbance or mental health symptoms have superior effectiveness.

Conclusion: The extant research indicates that CBT interventions are effective in ameliorating sleep disturbance in late-life depression and anxiety. Future high-quality research is required to substantiate this finding and to compare the effectiveness of CBT-I and CBT for depression and anxiety in this group to inform clinical practice.

Introduction

Depression and anxiety are common, and often comorbid mental health conditions in older adulthood (Byers et al., 2010; Prévile et al., 2008). Generalized anxiety disorder (GAD) is the most common anxiety disorder in the elderly (Beekman et al., 1998), primarily characterized by excessive and uncontrollable worry as well as somatic symptoms, including sleep disturbance (American Psychiatric Association, 2013). Depressive symptoms of clinical severity are reportedly present in 8–16% of community-dwelling older adults (Blazer, 2003), with core symptoms including depressed mood and lack of interest or pleasure (American Psychiatric Association, 2013).

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Σχόλιο:

Η ανωτέρω ανασκόπηση δημοσιεύτηκε πρόσφατα στο περιοδικό BEHAVIORAL SLEEP MEDICINE και ήταν μια ενδιαφέρουσα ανασκόπηση όσον αφορά το ρόλο της συμπεριφορικής θεραπείας στις διαταραχές του ύπνου που εμφανίζονται σαν συννοσηροτητες στα ηλικιωμένα άτομα με κατάθλιψη η αγχώδεις διαταραχές.

Η κατάθλιψη και η αγχώδης διαταραχή είναι επικρατούσες παθήσεις ψυχικής υγείας στους ηλικιωμένους. Παρά το γεγονός ότι η διαταραχή του ύπνου είναι μια κοινή συννοσηρότητα στην κατάθλιψη και στην αγχώδη διαταραχή στο τέλος της ζωής, συχνά παραλείπεται ως στόχος για θεραπεία. Η τρέχουσα ανασκόπηση στοχεύει να εξακριβώσει εάν η γνωστική-συμπεριφορική θεραπεία(CBT) είναι αποτελεσματική στη θεραπεία της ταυτόχρονης διαταραχής του ύπνου σε κατάθλιψη και σε αγχώδεις ηλικιωμένους ενήλικες και να στοιχειοθετήσει εάν η CBT παρεμβαίνει στοχεύοντας στο άγχος και την κατάθλιψη ή την ταυτόχρονη διαταραχή του ύπνου, και την εν τέλει αποτελεσματικότητα της μεθόδου.

Ως εκ τούτου πραγματοποιήθηκε μια συστηματική αναζήτηση βάσης δεδομένων στο Pubmed για τον προσδιορισμό ερευνητικών εργασιών που αξιολογούν την αποτελεσματικότητα των παρεμβάσεων CBT, σε ηλικιωμένους ενήλικες με συμπτώματα κατάθλιψης ή / και άγχους και συνυπάρχουσες διαταραχές του ύπνου. Τα αναγνωρισμένα έγγραφα που συμπεριλήφθηκαν περιήλθαν σε συστηματική ανασκόπηση. Από περίπου 399 λήμματα στην βιβλιογραφία που αρχικά βρέθηκαν τα 252 δεν πληρούσαν τις προδιαγραφές για να εισαχθούν στην ανασκόπηση και από τα περίπου 147 full text άρθρα μόνο 11 εν τέλει κατάφεραν να μπούνε στην τελική αξιολόγηση. Οι μελέτες είχαν πολύ καλή τεχνική οργάνωση και μεθόδους συλλογής δεδομένων, πολύ μικρό selection bias, μικτό counfounding και blinding και ασθενές προς μέτριο rating. Παρόλα αυτά εν τέλει η μελέτη έδειξε ότι η CBT είναι αποτελεσματική στη μείωση των διαταραχών του ύπνου στους καταθλιπτικούς ηλικιωμένους. Η CBT φάνηκε ξεκάθαρα ότι υπερείχε σε σχέση με άλλες τεχνικές όπως ψυχοεκπαίδευση, η yoga ή η φαρμακευτική θεραπεία. Παρόλο που μόνο μια μελέτη στην ανασκόπηση συνέκρινε CBT που εκτός από τον ύπνο είχε στόχο και την κατάθλιψη η υπεροχή της CBT έναντι των άλλων ήταν εμφανής. Επίσης δεν έγινε ξεκάθαρο αν η βελτίωση της ποιότητας του ύπνου στον πληθυσμό ήταν αποτέλεσμα της βελτίωσης του ύπνου συνολικά η της συνακόλουθης βελτίωσης της ψυχικής κατάστασης του ατόμου(κατάθλιψη, άγχος). Τα limitations της μελέτης είναι ο σχετικά μικρός αριθμός ερευνών που συμπεριλήφθηκαν(μόνο 11) η ετερογένεια των πληθυσμών και των μεθόδων συλλογής και η διαφορά στα καταληκτικά σημεία της κάθε μελέτης ως προς τη θεραπεία. Τέλος περαιτέρω έρευνα χρειάζεται για να αποσαφηνισθεί ο ρόλος της CBT στις διαταραχές του ύπνου.

Επιλογή άρθρου – Σχολιασμός: Δημήτριος Καντάς

Obstructive sleep apnoea and the progression of thoracic aortic aneurysm: a prospective cohort study

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Abstract

Background Obstructive sleep apnoea (OSA) is associated with an increased prevalence of aortic aneurysms and it has also been suggested that severe OSA furthers aneurysm expansion in the abdomen. We evaluated whether OSA is a risk factor for the progression of ascending thoracic aortic aneurysm (TAA).

Methods Patients with TAA underwent yearly standardised echocardiographic measurements of the ascending aorta over 3 years and two level III sleep studies. The primary outcome was the expansion rate of TAA in relation to the apnoea–hypopnoea index (AHI). Secondary outcomes included surveillance for aortic events (composite end-points of rupture/dissection, elective surgery or death).

Results Between July 2014 and March 2020, 230 patients (median age 70 years, 83.5% male) participated in the cohort. At baseline, 34.8% of patients had AHI ≥ 15 events \cdot h⁻¹. There was no association between TAA diameter and AHI at baseline. After 3 years, mean \pm SD expansion rates were 0.55 \pm 1.25 mm at the aortic sinus and 0.60 \pm 1.12 mm at the ascending aorta. In the regression analysis, after controlling for baseline diameter and cardiovascular risk factors, there was strong evidence for a positive association of TAA expansion with AHI (aortic sinus estimate 0.025 mm, 95% CI 0.009–0.040 mm; $p < 0.001$ and ascending aorta estimate 0.026 mm, 95% CI 0.011–0.041 mm; $p = 0.001$). 20 participants (8%) experienced an aortic event; however, there was no association with OSA severity.

Conclusion OSA may be a modest but independent risk factor for faster TAA expansion and thus potentially contributes to life-threatening complications in aortic disease.





Σχόλιο:

Προηγούμενες πολλές μελέτες ανέδειξαν την πολύπλοκη σχέση του ΣΑΑΥ με στεφανιαία, αγγειακά εγκεφαλικά και καρδιακές αρρυθμίες, αλλά όχι με την πνευμονική εμβολή και παθήσεις της αορτής. Τα ανευρύσματα της θωρακικής αορτής (προοδευτική -εντοπισμένη διάταση τοιχωμάτων) είναι μια ύπουλη και επικίνδυνη νόσος με αποτέλεσμα 21% των ασθενών να πεθαίνουν πριν την χορήγηση αγωγής). Προδιαθετικοί παράγοντες αποτελούν η ηλικία, υψηλή αρτηριακή πίεση, οικογενειακό ιστορικό (20% παρουσιάζουν μονή μετάλλαξη με αυτοσωματικό επικρατούντα χαρακτήρα) και κληρονομικές παθήσεις (Marfan, Loeys-Dietz, Ehler-Danlos). Η προοδευτική διάταση ορίσθηκε σαν $>/ 39$ mm στις γυναίκες και $>/ 44$ mm στους άνδρες (επίπεδο κόλπων Valsalva) και $>/ 42$ mm στις γυναίκες και $>/ 46$ mm στους άνδρες (ανιούσα αορτή). Παρακολουθήθηκαν 230 ασθενείς για 3 χρόνια με υπερηχο καρδιάς και όλοι είχαν μέτριο-σοβαρό ΣΑΑΥ (> 15 /ώρα, level III sleep device). Βρέθηκε μέση διάταση 0.55 (1.25)mm και 0.60(1.12)mm για aortic sinus και ανιούσα αορτή αντίστοιχα. Στην πολυπαραγοντική ανάλυση υπήρξε θετική συσχέτιση του AHI και αορτικής διάτασης. Πιθανές αιτίες, εκτός της διαλείπουσας υποξίας και της διέγερσης του συμπαθητικού, αποτελούν η σκλήρυνση της αορτής και τα pulsatile hemodynamics(1). Συμπερασματικά το ΣΑΑΥ πιθανώς αποτελεί ένα τροποποιήσιμο παράγοντα για ανευρύσματα αορτής και όπως αποφαινεται το σχετικό editorial , OSA may represent a new kid of the block in Thoracic aorta research.

Επιλογή άρθρου – Σχολιασμός: Παναγιώτης Πανάγου

1. [Increased pulse wave velocity and arterial hypertension in young patients with thoracic aortic endografts.](#) Tzilalis VD, Kamvysis D, Panagou P, Kaskarelis I, Lazarides MK, Perdikides T, Prassopoulos P, Boudoulas H. *Ann Vasc Surg.* 2012 May;26(4):462-7.

Positive airway pressure (PAP) treatment reduces glycated hemoglobin (HbA1c) levels in obstructive sleep apnea patients with concomitant weight loss: Longitudinal data from the ESADA

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Summary

Patients with obstructive sleep apnea (OSA) are at increased risk of developing metabolic disease such as diabetes. The effects of positive airway pressure on glycemic control are contradictory. We therefore evaluated the change in glycated hemoglobin (HbA1c) in a large cohort of OSA patients after long-term treatment with positive airway pressure. HbA1c levels were assessed in a subsample of the European Sleep Apnea Database [n=1608] at baseline and at long-term follow up with positive airway pressure therapy (mean 378.9±423.0 days). In a regression analysis, treatment response was controlled for important confounders.

Overall, HbA1c decreased from 5.98±1.01% to 5.93±0.98% (p=0.001). Patient subgroups with a more pronounced HbA1c response included patients with diabetes (-0.15±1.02, p=0.019), those with severe OSA baseline (-0.10±0.68, p=0.005), those with morbid obesity (-0.20±0.81, p<0.001). The strongest HbA1c reduction was observed in patients with a concomitant weight reduction >5 kilos (-0.38±0.99, p<0.001). In robust regression analysis, severe OSA (p=0.038) and morbid obesity (p=0.005) at baseline, and weight reduction >5 kilos (p<0.001) during follow up were

independently associated with a reduction of HbA1c following PAP treatment. In contrast, PAP treatment alone without weight reduction was not associated with significant Hb1Ac reduction.

In conclusion, positive airway pressure therapy is associated with HbA1c reduction in patients with severe OSA, in morbidly obese patients, and most obviously in those with significant weight lost during the follow-up. Our study underlines the importance to combine positive airway pressure use with adjustments in lifestyle to substantially modify metabolic complications in OSA.

KEYWORDS

HbA1c, positive airway pressure therapy, sleep apnea

Σχόλιο:

Πρόκειται για μια μελέτη παρατήρησης από την ομάδα ESADA η οποία και διήρκεσε από τον 03 2007 έως και τον 12 2017. Μελετήθηκαν τα επίπεδα γλυκοζυλιωμένης αιμοσφαιρίνης σε συνολικά 1608 ασθενείς με ή χωρίς ΣΔΙΙ και χρήση CPAP για τουλάχιστον 3 μήνες. Σε παλαιότερες μελέτες υπήρχαν αντικρουόμενα αποτελέσματα σε ότι αφορά στην επίδραση του PAP στον γλυκαιμικό έλεγχο του ασθενούς.

Τα τελικά αποτελέσματα της μελέτης αποδεικνύουν την έστω και μικρή επίδραση της χρήσης PAP στις τιμές της γλυκοζυλιωμένης αιμοσφαιρίνης στο σύνολο των ασθενών.

Ειδικότερα σε ασθενείς με σοβαρό ΣΑΥΥ(AHI>30), με αυξημένο BMI:>35, και με απώλεια κιλών πάνω από 5 κιλά υπήρξε στατιστικά σημαντική ελάττωση της γλυκοζυλιωμένης αιμοσφαιρίνης(p:0.002/<0.001/<0.001 αντίστοιχα)

Σε αυτό το σημείο αξίζει να τονιστεί ότι αρχικά δεν βρέθηκε συσχέτιση μεταξύ της συμμόρφωσης αλλά και της συνολικής διάρκειας θεραπείας στην πτώση της Hb1Ac. Στη συνέχεια όμως με προσαρμογή στον συνολικό χρόνο ύπνου αλλά και τον υπολειπόμενο AHI κάθε ασθενούς βρέθηκε γραμμική συσχέτιση των 2 παραπάνω στοιχείων και της παρατηρούμενης πτώσης της Hb1Ac.

Οι συγγραφείς εν τέλει επισημαίνουν την σημασία του συνδυασμού της απώλειας κιλών ταυτόχρονα με την χρήση PAP για τον επαρκή γλυκαιμικό έλεγχο του ασθενούς.

Επιλογή άρθρου – Σχολιασμός: Χαράλαμπος Πρωτοπαπαδάκης

RESEARCH ARTICLE



Sleep medicine catalogue of knowledge and skills – Revision

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Abstract

The 'catalogue of knowledge and skills' for sleep medicine presents the blueprint for a curriculum, a textbook, and an examination on sleep medicine. The first catalogue of knowledge and skills was presented by the European Sleep Research Society in 2014. It was developed following a formal Delphi procedure. A revised version was needed in order to incorporate changes that have occurred in the meantime in the International Classification of Sleep Disorders, updates in the manual for scoring sleep and associated events, and, most important, new knowledge in sleep physiology and pathophysiology. In addition, another major change can be observed in sleep medicine: a paradigm shift in sleep medicine has taken place. Sleep medicine

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is no longer a small interdisciplinary field in medicine. Sleep medicine has increased in terms of recognition and importance in medical care. Consequently, major medical fields (e.g. pneumology, cardiology, neurology, psychiatry, otorhinolaryngology, paediatrics) recognise that sleep disorders become a necessity for education and for diagnostic assessment in their discipline. This paradigm change is considered in the catalogue of knowledge and skills revision by the addition of new chapters.

Σχόλιο:

Πρόκειται για την 2η επικαιροποιημένη έκδοση (η 1η το 2014 των απαραίτητων γνώσεων και ικανοτήτων που πρέπει να έχουν όσοι ασχολούνται με την ιατρική του ύπνου.)

Ο κατάλογος αυτός αναλύεται στο SLEEP MEDICINE TEXTBOOK το οποίο και θα κυκλοφορήσει επικαιροποιημένο τον Ιούλιο. Στον κατάλογο των γνώσεων έχουν προστεθεί αρκετά πράγματα(κυρίως για τις σχέσεις της υπνολογίας με τις ειδικότητες της πνευμονολογίας/ψυχιατρικής/παθολογίας/νευρολογίας και γηριατρικής

Ακόμα έχουν αλλάξει πλήρως τα κεφάλαια για τις παραυπνίες/τις διαταραχές του κιρκάδιου ρυθμού/και τις κινητικές διαταραχές σε ύπνο.

Τέλος σε όλα τα υπόλοιπα κεφάλαια έχουν γίνει σημαντικές αλλαγές και προσαρμογές στα νεότερα δεδομένα

Στο συνημμένο στον πίνακα 1 υπάρχουν οι καινούριες γνώσεις και δεξιότητες σε ιατρική του ύπνου

Επιλογή άρθρου – Σχολιασμός: Χαράλαμπος Πρωτοπαπαδάκης



ORIGINAL ARTICLE

Sleep during menopausal transition: a 10-year follow-up

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Abstract

Study Objectives: A 10-year observational follow-up study to evaluate the changes in sleep architecture during the menopausal transition.

Methods: Fifty-seven premenopausal women (mean age 46 years, SD 0.9) were studied at baseline and after a 10-year follow-up. At both time points, polysomnography (PSG) was performed, and the serum follicle-stimulating hormone (S-FSH) concentration was measured. Linear regression models were used to study the effects of aging and menopause (assessed as change in S-FSH) on sleep.

Results: After controlling for body mass index, vasomotor, and depressive symptoms, higher S-FSH level was associated with longer sleep latency (B 0.45, 95% confidence interval [CI]: 0.07 to 0.83). Aging of 10 years was associated with shorter sleep latency (B -46.8, 95% CI: -77.2 to -16.4), shorter latency to stage 2 sleep (B -50.6, 95% CI: -85.3 to -15.9), decreased stage 2 sleep (B -12.4, 95% CI: -21.4 to -3.4), and increased slow-wave sleep (B 12.8, 95% CI: 2.32 to 23.3) after controlling for confounding factors.

Conclusions: This study suggests that PSG measured sleep of middle-aged women does not worsen over a 10-year time span due to the menopausal transition. The observed changes seem to be rather age- than menopause-dependent.

Statement of Significance

Sleep complaints increase markedly during the menopausal transition. However, the studies evaluating sleep architecture have produced conflicting results. Few longitudinal studies with polysomnography parameters have assessed sleep across menopause. This article reports changes in sleep architecture in 57 midlife women across 10 years (mean ages 46 and 56 years). According to the current results, the amount of light sleep decreased over time, but instead sleep latency shortened and the amount of deep sleep increased.

Key words: menopause; sleep architecture; polysomnography (PSG); slow-wave sleep (SWS); sleep latency; follicle stimulating hormone (FSH); aging

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Σχόλιο:

Κατά την εμμηνοπαυσιακή περίοδο αυξάνουν σημαντικά οι αναφορές σχετικά με κακής ποιότητας ύπνο. Μελέτες που αξιολογούν την αρχιτεκτονική του ύπνου σε εμμηνοπαυσιακές γυναίκες είχαν αντικρουόμενα αποτελέσματα. Λίγες ερευνητικές προσπάθειες, που περιέχουν πολυυπνογραφικές παραμέτρους παρακολούθησαν αυτήν την κατηγορία ασθενών επί μακρόν.

Το ακόλουθο άρθρο αφορά 57 γυναίκες (μέση ηλικία 46 έτη) που μελετήθηκαν για 10 έτη, σχετικά με τις αλλαγές της αρχιτεκτονικής του ύπνου. Και στην αρχή και στο τέλος της περιόδου παρακολούθησης υποβλήθηκαν σε πολυυπνογραφία με ταυτόχρονη μέτρηση της S-FSH. Υψηλότερα επίπεδα S-FSH συσχετίστηκαν με μεγαλύτερο χρόνο έλευσης ύπνου. Επίσης η πάροδος 10 ετών σχετίζεται με μικρότερο χρόνο έλευσης ύπνου, μικρότερο χρόνο έλευσης S2, μικρότερο χρόνο ύπνου σε στάδιο S2 και περισσότερο SWS.

Συμπερασματικά, τα πολυυπνογραφικά στοιχεία υποδεικνύουν πως ο ύπνος των γυναικών μέσης ηλικίας δεν επιδεινώνεται λόγω της εμμηνοπαυσιακής αλλαγής. Οι παρατηρούμενες αλλαγές σχετίζονται με την ηλικία παρά με την ορμονική αλλαγή.

Επιλογή άρθρου – Σχολιασμός: Ευαγγελία Φλώρου