Prevalence of Sleep Related Breathing Disorder in Elderly Complaining of Poor Sleep
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Introduction
✓ Deterioration in sleep quality, efficiency and increased sleep related breathing disorders occur with aging.¹
✓ Respiratory events cause arousals that have additional adverse effects on sleep quality and daytime function.²
✓ Objective: The evaluation of obstructive sleep apnea (OSA) in an elderly population complaining of poor sleep/insomnia.

Methods
✓ Active subjects over 60 years old complaining of poor night time sleep were recruited for a yoga treatment study for insomnia.
✓ Prior to enrollment, they were interviewed and examined by an experienced sleep physician. Subjects with proved or suspected OSA were excluded.
✓ 77 subjects enrolled, age 74.2±7.0 years, 80.6% females, BMI 25.9±3.8.
✓ 67 had at least one home sleep study, and 51 had two studies, performed with an Emblettà x30 device.
✓ ECG, oxygen saturation and pulse wave were continuously recorded throughout the night.
✓ The HC1000P diagnostic software:
  • Detects respiratory events by ECG morphology (ECG Derived Respiration-EDR) and pulse oximetry.³⁴
  • In addition the system identifies sleep architecture, arousals and awakenings. This is based on the connection between sleep and differential autonomic nervous system modulation of instantaneous heart rate during different sleep stages.⁵⁶

Results
✓ Automatic scoring based on HC1000P software yielded sleep architecture information, arousals, sleep efficiency and apnea and hypopnea events per hour of sleep (AHI).
✓ Diagnosis was based on clinical information obtained at enrollment and test results.

Sleep Architecture:
✓ Total sleep time 357 min±71; sleep efficiency 84.8%±4.2; REM% 17.5±6.0; NREM% 69.3±14.2, arousals index 18.3±20.3.
  Similar results were obtained during the second study (51 subjects).

Respiration During Sleep:
✓ 12% had no OSA, AHI<5
✓ 48% had 5≤AHI<15
✓ 28% had 15≤AHI<30
✓ 12% had AHI≥30
40% of all subjects (N=77) were found to have latent moderate to severe obstructive sleep apnea, 64% of subjects had AHI greater than 10 events per hour of sleep.

No statistical correlation was found between BMI, age and AHI.

Conclusions
✓ We found that a majority (64%) of elderly active people complaining of poor sleep quality has undiagnosed obstructive sleep apnea that cannot be predicted by clinical findings or questionnaires.
✓ This high incidence occurs in a woman predominant population with a multitude of medical problems (hypertension, heart disease, diabetes) and use of various sleep promoting medications.
✓ Efficient treatment of the OSA in these patients should have positive impact on their general health and function and improve sleep quality.
✓ Since clinical evaluation is unreliable at this age, elderly should have simple, cost effective home diagnosis of their disorder, allowing for treatment, when needed.

References