

HIGHLIGHTS from SLEEP

Off-Label Treatment of Severe Childhood Narcolepsy-Cataplexy With Sodium Oxybate

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Study Objectives: To evaluate the efficacy and side-effect profile of off-label sodium oxybate (gamma hydroxy butyrate) therapy in severe childhood narcolepsy-cataplexy.

Design: Retrospective; chart review.

Setting: A multidisciplinary tertiary sleep center.

Patients: A group of eight children with severe narcolepsy-cataplexy diagnosed on the basis of clinical history, nocturnal polysomnography and the multiple sleep latency test were studied. A modified Epworth Sleepiness Scale and an arbitrary cataplexy severity scale (1=minimal weakness, 2=voluntarily preventable falls, 3= falls to the ground) were utilized.

Interventions: Sodium oxybate therapy; concurrent medications were maintained.

Measurements and Results: Before sodium oxybate therapy, all subjects had suboptimally controlled sleepiness and cataplexy. Following treatment with sodium oxybate, 7/8 subjects (88%) improved. Cataplexy

frequency decreased from a median of 38.5 to 4.5/ week ($p=0.0078$). Cataplexy severity decreased from 2.75 to 1.75 ($p = 0.06$). The Epworth Sleepiness Scores improved from a median of 19 to 12.5 ($p = 0.02$). Suicidal ideation, dissociative episodes, tremor and constipation occurred in one subject each and terminal insomnia in two. Three of the 8 (38%) discontinued therapy. Two stopped the drug owing to side effects and one due to problems with postal delivery of the medication.

Conclusions: This is the first report on sodium oxybate therapy in childhood narcolepsy-cataplexy. Our finding of improvement in cataplexy and sleepiness suggests that this medication is effective in treating severe childhood narcolepsy-cataplexy.

Keywords: Narcolepsy, cataplexy, gamma hydroxy butyrate, treatment, sodium oxybate, Xyrem

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Lateral Sleeping Position Reduces Severity of Central Sleep Apnea / Cheyne-Stokes Respiration

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Introduction: The influence of sleeping position on obstructive sleep apnea severity is well established. However, in central sleep apnea with Cheyne Stokes respiration (CSA-CSR) in which respiratory-control instability plays a major pathophysiologic role, the effect of position is less clear.

Study Objectives: To examine the influence of position on CSA-CSR severity as well as central and mixed apnea frequency.

Methods: Polysomnograms with digitized video surveillance of 20 consecutive patients with heart failure and CSA-CSR were analyzed for total apnea-hypopnea index, mean event duration, and mean oxygen desaturation according to sleep stage and position. Position effects on mixed and central apnea index, mean apnea duration, and mean desaturation were also examined in non-rapid eye movement sleep.

Results: Data are presented as mean \pm SEM unless otherwise indicated. Group age was 59.9 ± 2.3 years, and total apnea-hypopnea index was 26.4 ± 3.0 events per hour. Compared with supine position, lateral position reduced the apnea-hypopnea index in all sleep stages (Stage 1, 54.7 ± 4.2 events per hour vs 27.2 ± 4.1 events per hour [$p < .001$]; Stage 2, 43.3 ± 6.1 events per hour vs 14.4 ± 3.6 events per hour [$p < .001$]; slow-

wave sleep, 15.9 ± 6.4 events per hour vs 5.4 ± 2.9 events per hour [$p < .01$]; rapid eye movement sleep, 38.0 ± 7.3 events per hour vs 11.0 ± 3.0 events per hour [$p < .001$]). Lateral position attenuated apnea and hypopnea associated desaturation (supine $4.7\% \pm 0.3\%$, lateral $3.0\% \pm 0.4\%$; $p < .001$) with no difference in event duration (supine 25.7 ± 2.8 seconds, lateral 26.9 ± 3.4 seconds; $p = .921$). Mixed apneas were longer than central (29.1 ± 2.1 seconds and 19.3 ± 1.1 seconds; $p < .001$) and produced greater desaturation ($6.1\% \pm 0.5\%$ and $4.5\% \pm 0.5\%$, $p = .003$). Lateral position decreased desaturation independent of apnea type (supine $5.4\% \pm 0.5\%$, lateral $3.9\% \pm 0.4\%$; $p = .003$).

Conclusions: Lateral position attenuates severity of CSA-CSR. This effect is independent of postural effects on the upper airway and is likely to be due to changes in pulmonary oxygen stores. Further studies are required to investigate mechanisms involved.

Keywords: Central sleep apnea, body position, ventilatory control

Citation: Szollosi I; Roebuck T; Thompson B et al. Lateral Sleeping Position Reduces Severity of Central Sleep Apnea / Cheyne-Stokes Respiration. *SLEEP* 2006;29(8):1045-1051.

Recommendations for a Standard Research Assessment of Insomnia

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Study Objectives: To present expert consensus recommendations for a standard set of research assessments in insomnia, reporting standards for these assessments, and recommendations for future research.

Participants: N/A.

Interventions: N/A.

Methods and Results: An expert panel of 25 researchers reviewed the available literature on insomnia research assessments. Preliminary recommendations were reviewed and discussed at a meeting on March 10-11, 2005. These recommendations were further refined during writing of the current paper. The resulting key recommendations for standard research assessment of insomnia disorders include definitions/diagnosis of insomnia and comorbid conditions; measures of sleep and insomnia, including qualitative insomnia measures, diary, polysomnography, and

actigraphy; and measures of the waking correlates and consequences of insomnia disorders, such as fatigue, sleepiness, mood, performance, and quality of life.

Conclusions: Adoption of a standard research assessment of insomnia disorders will facilitate comparisons among different studies and advance the state of knowledge. These recommendations are not intended to be static but must be periodically revised to accommodate further developments and evidence in the field.

Keywords: Insomnia, diagnosis, polysomnography, sleep diary, actigraphy, questionnaires

Citation: Buysse DJ; Ancoli-Israel S; Edinger JD et al. Recommendations for a standard research assessment of insomnia. *SLEEP* 2006;29(9):1155-173.

Complex Sleep Apnea Syndrome: Is It a Unique Clinical Syndrome?

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Study Objectives: Some patients with apparent obstructive sleep apnea hypopnea syndrome (OSAHS) have elimination of obstructive events but emergence of problematic central apneas or Cheyne-Stokes breathing pattern. Patients with this sleep-disordered breathing problem, which for the sake of study we call the "complex sleep apnea syndrome," are not well characterized. We sought to determine the prevalence of complex sleep apnea syndrome and hypothesized that the clinical characteristics of patients with complex sleep apnea syndrome would more nearly resemble those of patients with central sleep apnea syndrome (CSA) than with those of patients with OSAHS.

Design: Retrospective review

Setting: Sleep disorders center.

Patients or Participants: Two hundred twenty-three adults consecutively referred over 1 month plus 20 consecutive patients diagnosed with CSA.

Interventions: NA.

Measurements and Results: Prevalence of complex sleep apnea syndrome, OSAHS, and CSA in the 1-month sample was 15%, 84%, and 0.4%, respectively. Patients with complex sleep apnea syndrome differed in gender from patients with OSAHS (81% vs 60% men, $p < .05$) but were otherwise similar in sleep and cardiovascular history. Patients with complex sleep apnea syndrome had fewer maintenance-insomnia complaints

(32% vs 79%; $p < .05$) than patients with CSA but were otherwise not significantly different clinically. Diagnostic apnea-hypopnea index for patients with complex sleep apnea syndrome, OSAHS, and CSA was 32.3 ± 26.8 , 20.6 ± 23.7 , and 38.3 ± 36.2 , respectively ($p = .005$). Continuous positive airway pressure suppressed obstructive breathing, but residual apnea-hypopnea index, mostly from central apneas, remained high in patients with complex sleep apnea syndrome and CSA (21.7 ± 18.6 in complex sleep apnea syndrome, 32.9 ± 30.8 in CSA vs 2.14 ± 3.14 in OSAHS; $p < .001$).

Conclusions: Patients with complex sleep apnea syndrome are mostly similar to those with OSAHS until one applies continuous positive airway pressure. They are left with very disrupted breathing and sleep on continuous positive airway pressure. Clinical risk factors don't predict the emergence of complex sleep apnea syndrome, and best treatment is not known.

Keywords: Sleep apnea, mixed central and obstructive; sleep-disordered breathing; sleep hypopnea

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Nightmare Complaints in Treatment-Seeking Patients in Clinical Sleep Medicine Settings: Diagnostic and Treatment Implications

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Study Objectives: To develop clinical guideposts to identify patients with salient nightmare conditions.

Design: Prevalence data from a retrospective chart review on a consecutive series of sleep patients to assess how or whether those with nightmares (1) rank nightmare complaints compared to other sleep complaints, (2) link nightmares to disrupted sleep, (3) report worse sleep symptoms and health outcomes compared to other sleep patients, and (4) endorse criteria for a salient nightmare condition on the Disturbing Dream and Nightmare Severity Index.

Setting: Two community sleep facilities: private sleep medical center and a hospital-based sleep lab.

Patients: Seven hundred eighteen patients presenting at intake: sleep center (n = 620); sleep lab (n = 98).

Measurements and Results: Standard sleep parameters and various health outcomes were assessed with self-report measures. Of 718 sleep patients, 186 ranked a nightmare complaint among their sleep problems, of whom 117 linked their bad dreams to disrupted sleep, suggesting a po-

tential salient nightmare condition. Compared to all other sleep patients, these 117 cases demonstrated consistent significant patterns of worse or more prevalent problems with self-reported sleep indexes, insomnia, sleep quality, sleep-fragmentation factors, sleep-related daytime impairment, psychiatric history, medical comorbidity, and parasomnias. The Disturbing Dream and Nightmare Severity Index identified those with salient nightmare complaints and correlated with worse sleep and health outcomes.

Conclusions: At 2 sleep medical facilities, 16% of patients presented with an apparent salient nightmare condition, and these patients were identified with simple clinical guideposts, which could be incorporated at intake in various sleep medicine settings.

Keywords: Nightmares, insomnia, sleep quality, sleep fragmentation, impairment, imagery rehearsal therapy

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REM Sleep Behavior Disorder and REM Sleep Without Atonia in Probable Alzheimer Disease

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Study Objective: To determine the frequency of rapid eye movement (REM) sleep behavior disorder (RBD) and REM sleep without atonia among patients with Alzheimer disease and control subjects.

Design: Overnight polysomnography.

Settings: Sleep laboratory.

Patients: Fifteen patients with probable Alzheimer disease (mean age \pm SD, 70.2 \pm 5.6) and 15 age-matched healthy control subjects (mean age \pm SD, 67.9 \pm 5.4).

Intervention: N/A.

Results: Four patients with Alzheimer disease presented REM sleep with-

out atonia. One of these patients had all the polysomnographic features of RBD, including behavioral manifestations during REM sleep.

Conclusion: RBD is rare, but REM sleep without atonia is relatively frequent in patients with probable Alzheimer disease, a tauopathy.

Keywords: REM sleep behavior disorder; Alzheimer disease; REM sleep without atonia; polysomnography, tauopathy, synucleinopathy.

Citation: Gagnon JF; Petit D; Fantini ML et al. REM sleep behavior disorder and REM sleep without atonia in probable Alzheimer disease. *SLEEP* 2006;29(10):1321-1325.