

findings on DISE contributed to surgical planning for the patients in our centre.

**Conclusions:** In our study, drug induced sleep endoscopy recorded substantially higher levels of airway collapse as compared to assessment using awake nasoendoscopy with Müller's manoeuvre. The review of our DISE cases revealed the commonest site of airway collapse to be the velum followed by the tongue base in our local population. DISE enhanced our practice by guiding surgery and clinical outcomes in several cases.

#### Basic Research

### PREVALENCE OF SNORING AND OBSTRUCTIVE SLEEP APNEA AND THEIR RELATIONS WITH DOCTOR DIAGNOSED NCDs OF AN ADULT URBAN POPULATION IN WEST BENGAL, INDIA: AN INTERIM REPORT

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**Introduction:** Barrackpore Health Study, a longitudinal study conducted general health including snoring and demographic questionnaire survey 2001 and 2011 of randomly selected 3030 households of Barrackpore, West Bengal, India. Both survey results show increased risk of Doctor Diagnosed (DD) NCDs among Snorers (SN) compared to Non-snorers (NSN), presented in the ASRS Congress 2014 India, abstract 86. Hence the study embarked on for objective evidence of prevalence of:

1. OSA and its relationship with snoring history.
2. Associations of each with DD-NCDs.

**Materials and methods:** In the ongoing cross-sectional study, 432 adults (18–70 yrs.) were assessed between February 2016 – April 2017. The current report considered Hypertension, Diabetes and Body Mass Index (BMI) as DD-NCDs. For OSA symptoms and sleep health Wisconsin sleep questionnaire was used. Apnea Link Plus used to assess OSA. For OSA gradation International classification of Apnea-Hypopnea Index (AHI) is used.

**Results:** 46.53% male and 53.47% female. OSA 215 (49.77%), 29% with AHI >=15AHI. Snorers 200 (46.30%), OSA with snorers 135 (31.19%), OSA with non-snorers 80 (18.52%), non-snorers with no OSA 152 (35.19%), snorers with no OSA 65 (15.05%).

About 50% of the male and a little less than 50% of the female participants were snorers. 70% male snorer and 65% female snorer had OSA. 33.83% male mild OSA, 36.17% female with mild OSA. Higher proportion of male had moderate (11.94%) and severe OSA (8.46%) than female. Compare to non-snores with no OSA, non-snorers with OSA [AOR=2.01, 95% CI: 1.11, 3.62, p=0.0217] were associated with DD-Hypertension. Snorers with OSA were associated with DD-Hypertension [AOR=2.84, 95% CI: 1.71, 4.71, p<.0001] and DD-Diabetes [AOR=2.33, 95% CI: 1.20, 4.50, p=0.0123] compare to non-snores with no OSA. Increasing BMI, both overweight and obese group were associated [Overweight: AOR=4.25, 95% CI: 2.45, 7.35, p<.0001; Obese: AOR=6.18, 95% CI 2.75, 13.99; p<.0001] with snorers with OSA.

**Conclusions:** Around half of the cohort population has either OSA or snoring. Over two-third with OSA are a snorer, about one out of three non-snorers have OSA. little less than one-third with both OSA and snoring. Little over one third neither OSA nor snoring history. Doctor diagnosed – hypertension, diabetes and BMI are analysed as prevalent NCDs. Numbers and or strength of other NCDs were inadequate.

Prevalence of three DD-NCDs: highest among OSA with snoring, lowest among non OSA and non-snorer groups. Other groups prevalence is in-between. Overall, individuals with OSA (AHI≥15) have increased prevalence compared with mild OSA (AHI< 15) in all the subgroups.

The Present results suggest snoring history isn't a reliable marker of OSA. Beside one-third non-snorer having OSA, one-third of snorers have no OSA. Snorers with no OSA have increased incident NCDs.

Take home: Information from randomized a periodic survey of adequate numbers with validated protocol at acceptable intervals is expected to achieve:

1. The trend of OSA and snoring.
2. The trend of the association between baseline characteristics and incident NCDs including may be temporality.

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#### Other

### ACUTE ENERGY BALANCE ALTERATION MODIFIES SLEEP ORGANIZATION IN HEALTHY MEN

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**Introduction:** A link between sleep organization and metabolic regulation has been reported but the impact of changes in energy balance on sleep is less understood. We evaluate whether changes in energy balance modulate nighttime sleep organization and the spectral power of sleep.

**Materials and methods:** We studied a sample of 10 healthy young normal-weight men. They underwent a 5-consecutive nights in-lab protocol, where sleep was measured at baseline (BL, 1st night), after 2 days of Caloric Restriction (CR, 10% of individual energy requirements), and after 2 days of caloric supply restoration by *ad libitum* feeding (AL). Sleep was assessed by PSG and sleep stages scored according to R&K. Spectral power analysis of artifacts-free EEG segments (C4-O1 derivation) was conducted during the first 2 hours after sleep onset. Delta (0.5–4.5 Hz), theta (4.5–8 Hz), alpha (8–12 Hz), sigma (12–15 Hz) and beta (15–25 Hz) power was calculated and compared between BL, CR and AL conditions.

**Results:** Total sleep time, sleep efficiency, wakefulness, REM sleep or non-REM stages S1 and S2 were similar between conditions. However, S4 time (65.2±9.0 vs. 82.5±5.1 min., p=0.003) and percentage of TST (16.1±2.3 vs. 19.7±1.4 %, p=0.01) was increased after 2 nights of CR compared with BL (but similar to AL). Higher delta- (51.3±1.3 vs. 52.8±1.2 %, p=0.05) but lower beta-power (11.4±0.6 vs. 9.7±0.7 %, p=0.03) was found after CR compared with AL. Theta-power was lower after AL compared with both BL and CR (p=0.001). Alpha or sigma bands were not affected by changes in energy balance.

**Conclusions:** Acute depletion of energy balance increases the deepest stage of non-REM sleep. Spectral analyses suggest a deepening of the ongoing sleep process after CR, reflected by an increased delta- and reduced beta-power. These findings provide further evidence for a strong connection between energy homeostasis and sleep regulation in humans.

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#### Other

### A SINGLE NIGHT MODERATE SLEEP RESTRICTION AT-HOME INCREASES HUNGER AND CALORIC INTAKE IN YOUNG ADULTS

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