**Feasibility and Prevalence of high risk Obstructive Sleep Apnea and Insomnia ascertained by STOP and Insomnia Severity Index in Neurological Disorders: A novel preliminary experience in a tertiary care center**

Harneet K Walia, Tyler Kinzy, Irene Katzan, Nancy Foldvary-Schaefer

Sleep Disorders Center, Cleveland Clinic

Department of Quantitative Health Sciences, Cleveland Clinic, Cleveland, Ohio

**Introduction**Obstructive Sleep Apnea (OSA) and Insomnia are highly prevalent, however limited data exist using common sleep screening instruments in neurological patients. We evaluated the results of the STOP and Insomnia Severity Index (ISI) and report the prevalence of high risk OSA (h-OSA) and insomniants.

**Methods**

STOP and ISI were collected from March 2015-October 2016 at the first patient visit in Adult Psychiatry (AP), Neuro-restoration (NR), Cerebrovascular (CV), Brain Tumor (BT) and Epilepsy. STOP ≥2 was defined as h-OSA and ISI ≥15 as having insomnia. The association between h-OSA and insomnia and disease-specific outcomes including modified Rankin Scale (CV), UPDRS II scale (NR), ECOG and KPS (BT), Liverpool Seizure Severity Scale (LSSS) (Epilepsy), and PHQ-9 (all centers) was examined using multivariate logistic regression models.

**Results**

STOP and ISI were completed by 39.3% (R 31.3%-47.2%) and 43.2% (R- 34.1-50.5%) of 19086 new patients, respectively. Crude prevalence estimates for h-OSA and insomnia were 36.6% (R 29.5- 47.5%) and 25% (R 19.8-33.1%), respectively. After adjustment for demographic and clinical covariates, an increase of one in PHQ-9 (OR: 1.22, 95% CI: 1.20-1.24), UPDRS II (OR = 1.03; 95% CI: 1.01-1.05) and LSSS (OR = 1.02, 95% CI: 1.004-1.03) was associated with higher odds of insomnia. An increase in PHQ-9 resulted in 1.06 times higher odds of h-OSA (95% CI: 1.04-1.07). Comparing centers adjusted for covariates including PHQ-9, BT had 1.58 times higher odds of insomnia (95% CI: 1.25-2.00) compared to the reference AP. For h-OSA, all centers had significantly higher odds than AP; CV was associated with 1.91 times higher odds (95% CI: 1.59-2.30), Epilepsy 1.48 times higher odds (95% CI: 1.16-1.90), BT 1.43 times higher odds (95% CI: 1.16-1.75), and NR 1.23 times higher odds (95% CI: 1.05-1.45).

**Conclusions**

h-OSA and insomnia are highly prevalent in neurological patients. Routine screening is recommended.

**Support**

We acknowledge the Knowledge Program Data Registry of Cleveland Clinic, Cleveland, OH for providing the data used in this analysis and the Neurological Institute Center for Outcome Research and Evaluation (NICORE) Cleveland Clinic Cleveland, OH and the NICORE Scholars Award for providing biostatistical support.