



New Survey Highlights Lack of Awareness of Neurologic Effects Related to Excessive Sleepiness in Patients with Obstructive Sleep Apnea

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Survey findings show that while pulmonologists, neurologists and psychiatrists are aware of the negative effects of Excessive Sleepiness (ES) on patients' quality of life, few are familiar with emerging research linking the condition to brain alterations [1],[2]

Findings also demonstrate that there is no standardized approach among physicians across medical disciplines for identifying and evaluating this underreported symptom of OSA [3],[4]

DUBLIN, May 31, 2018 /PRNewswire/ -- Jazz Pharmaceuticals plc (Nasdaq: JAZZ) today announced findings from a new survey of the opinions of specialist physicians who treat patients with obstructive sleep apnea (OSA), a chronic sleep condition often characterized by Excessive Sleepiness (ES), pauses in breathing and airway blockage.^{3,4} The survey, created and sponsored by Jazz, demonstrates that the vast majority (97.6%) of responding physicians are aware of the negative effects that ES can have on patients' quality of life, while less than a third (29%) of physicians are very aware of emerging scientific research linking OSA to serious brain alterations that affect wakefulness.^{1,2}

OSA is a prevalent disease (as high as 14% in men and 5% in women) in which ES is a major presenting complaint in many cases.^{5,6} Recent scientific research suggests that in some cases, OSA can lead to brain alterations that increase sleepiness. These alterations may be independent of airway therapies, including continuous positive airway pressure (CPAP).⁷⁻¹² Evidence suggests that ES may result from neuronal injury caused by OSA. In animal studies, chronic intermittent hypoxia and fragmented sleep caused loss of neurons in wakefulness-promoting regions of the brain. Structural changes in gray and white matter have been associated with reduced neurocognitive performance and compromised neuronal connectivity in patients with OSA. CPAP is the standard of care in the management of symptoms of moderate to severe OSA. Diagnosis of ES in OSA is based on a clinical assessment, which must be made by the treating physician after airway treatment is implemented and all other causative disorders have been ruled out, including other untreated sleep disorders, mental disorders, or the effects of medication. Excessive Sleepiness in OSA is associated with adverse health consequences, including neurocognitive and functional impairment.^{13,14}

"Though significant progress is being made across medical disciplines to identify ES in patients with OSA, research shows that effects of this condition are far more detrimental to the brain than previously known," said Jed Black, M.D., senior vice president, Sleep and CNS Medicine at Jazz Pharmaceuticals and adjunct professor, Stanford Center for Sleep Sciences and Medicine. "Jazz is committed to ongoing research, education and advocacy on behalf of these patients and the sleep community to share insights that may lead to advances in treatment and medical practice."

Findings from the non-validated survey also highlight opportunities to standardize identification and evaluation of ES symptoms across specialties. The majority of pulmonologists (82%) identified that they most often use the Epworth Sleepiness Scale (ESS), while the majority of psychiatrists (76%) reported primarily using informal questions, and neurologists were more evenly divided between the two methods they could select in the survey (54% using ESS and 68% using informal questions).¹⁵⁻¹⁷ In addition, 44.6% of pulmonologists reported evaluating their patients for ES symptoms every six months, while 49.1% of neurologists reported evaluating their patients every three months and psychiatrists reported evaluating their patients every one-to-three months (33% - one month; 47.5% - three months), possibly reflecting the frequency of office visits for the different specialists.¹⁸⁻²⁰

"This survey provides meaningful new insights into how we, as healthcare providers/clinicians, are evaluating patients with OSA-related ES and ultimately, partnering with them to improve health," said Richard K. Bogan, MD, FCCP, FAASM, Associate Clinical Professor at the University of South Carolina School of Medicine and Chief Medical Officer at SleepMed in Columbia, SC. "As more scientific evidence emerges around the neuronal injury occurring due to OSA and the potential neurocognitive effects of ES, it's imperative that pulmonologists, neurologists and psychiatrists understand the impact ES can have on patients' lives."

About the Survey and SERMO

This survey was created and sponsored by Jazz and administered by SERMO. Participants in the 10-question self-administered online SERMO non-validated survey included a nationally-representative sample of 476 neurologists, pulmonologists, and psychiatrists from across the U.S. who provide treatment to patients with OSA. They were surveyed on key topics in excessive sleepiness and obstructive sleep apnea. The study was conducted from March 30-31, 2018 using SERMO's RealTime platform. Dr. Bogan is a paid consultant for Jazz Pharmaceuticals.

About OSA and Excessive Sleepiness

OSA is a prevalent disease (as high as 14% in men and 5% in women) in which excessive sleepiness is a major presenting complaint in many cases.^{3,5} Excessive Sleepiness in OSA is associated with impairments in cognitive function, safety, productivity, interpersonal relationships, and overall quality of life. Positive Airway Pressure (PAP) therapy, with its most common form being Continuous Positive Airway Pressure (CPAP), has been shown to be an effective therapy for sleep-related airway obstruction, with frequent improvement in excessive sleepiness in many patients; however, not all patients tolerate CPAP therapy and among those who tolerate CPAP, usage is highly variable. It is estimated that excessive sleepiness persists in 13%–65% of people utilizing CPAP for OSA.^{3,21,22}

About Jazz Pharmaceuticals plc

Jazz Pharmaceuticals plc (Nasdaq: JAZZ) is an international biopharmaceutical company focused on improving patients' lives by identifying, developing and commercializing meaningful products that address unmet medical needs. The company has a diverse portfolio of products and product candidates with a focus in the areas of sleep and hematology/oncology. In these areas, Jazz Pharmaceuticals markets Xyrem® (sodium oxybate) oral solution, Erwinaze® (asparaginase *Erwinia chrysanthemi*), Defitelio® (defibrotide sodium) and Vyxeos® (cytarabine and daunorubicin) liposome for injection in the U.S. and markets Erwinaze® and Defitelio® (defibrotide) in countries outside the U.S. For country-specific product information, please visit <http://www.jazzpharmaceuticals.com/products>. For more information, please visit www.jazzpharmaceuticals.com and follow us

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