Technology Commercialization Office

Novel Technology Opportunity Available
Non-confidential summary

Intranasal Oxytocin Therapy for Obstructive Sleep Apnea

Inventors: **David Mendelowitz**, Pharmacology and Physiology
Vivek Jain, Division of Pulmonary, Critical Care & Sleep Medicine
Heather Jameson, Pharmacology and Physiology
Jay Shawn Kimbro, Division of Pulmonary, Critical Care & Sleep Medicine

Field
Medical, Pharmacological Therapeutic

Objective
Seeking development and licensing partners

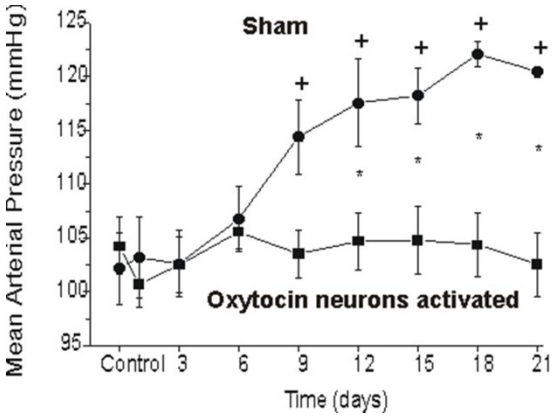
Keywords
Sleep Apnea, OSA, CPAP, Oxytocin, Intranasal, Cardiac Homeostasis, Parasympathetic control, Compliance

Obstructive sleep apnea (OSA) is a health risk that occurs in 24% of males and 9% of females in the United States. OSA can lead to several cardiovascular diseases including hypertension, arrhythmia, and stroke. Continuous positive airway pressure (CPAP) treatments often fail due to low compliance.

GW Researchers developed an intranasal oxytocin administration method that protects OSA patients by maintaining cardiovascular homeostasis. They also see potential for decreasing awakening events, decreasing hypoxia, increasing sleep quality, and increasing compliance with CPAP.

Oxytocin is a human peptide hormone well known for its roles in childbirth. Oxytocin is also involved in anxiety and social bonding, which is why it may help with CPAP compliance. In animal models of social stressors, oxytocin has been shown to be protective against behavioral and cardiac dysfunction.

Published pilot human sleep studies were completed at GW and more are in progress. Cardiac benefits of stimulating oxytocin-releasing neurons in the brain were seen when in rats faced with chronic intermittent low oxygen (a model for OSA).



Activating oxytocin-releasing neurons prevents increase in blood pressure during chronic intermittent low oxygen in rats.

Applications:

- Treat OSA patients with or without concurrent CPAP

Advantages:

- Reduce risk of cardiovascular diseases such as hypertension and tachycardia
- Increase Patient compliance with standard CPAP treatment
- Can integrate with CPAP device for intranasal delivery by nebulizer

Patent Status: US patent granted 10,166,268; US application 16/184,091 notice of allowance received

Contact: Brian Coblitz, Sr. Licensing Associate
Tel: +1-202-994-4345
Email: coblitz@gwu.edu