

UC Davis

UC Davis Previously Published Works

Title

1167 Novel Medications to Optimize Sleep in Neurodevelopmental Disorders

Permalink

<https://escholarship.org/uc/item/9047n99c>

Journal

Sleep, 49(Supplement_1)

ISSN

0161-8105

Authors

Usama, Muhammad

Janda, Alyson

Wombles, Christina

et al.

Publication Date

2026-05-08

DOI

10.1093/sleep/zsag091.1166

Novel Medications to Optimize Sleep in Neurodevelopmental Disorders

Muhammad Usama MD¹, Alyson Janda², Christina Wombles APRN³, Holly Skinner DO, MS³, and Temitayo Oyegbile-Chidi MD, PhD²

1-King Edward Medical University, Lahore, Punjab, Pakistan

2- UC Davis Medical Center, Department of Neurology, Sacramento, CA, USA

3- Advent Health, Orlando, FL, USA

Introduction

Sleep initiation and maintenance difficulties are highly prevalent in individuals with neurodevelopmental disorders (NDDs) and contribute to impaired daytime functioning, behavioral dysregulation, caregiver sleep loss, and reduced quality of life. Sleep disruption may exacerbate neurobiological dysfunction through alteration of neurotransmitter systems and inflammatory pathways. Despite the clinical significance, commonly used sleep agents-such as melatonin, clonidine, gabapentin, and trazodone- are often ineffective in this population, and evidence supporting newer sleep medications in NDDs remains sparse.

Methods

A prospective evaluation was conducted for 2 clinic patients with documented NDDs and chronic sleep impairment who were treated with newer sleep-targeting therapies. The Children's Sleep Habits Questionnaire (CSHQ) was used to quantify changes in sleep quality.

Results

Case 1: A 24-year-old male with Dravet syndrome (SCN1A mutation) developed profound insomnia following an ICU hospitalization requiring dexmedetomidine. He slept only 4 hours nightly, with frequent awakenings that required constant parental monitoring. Trials of melatonin and zolpidem were ineffective. Initiation of **daridorexant** 50 mg nightly resulted in near-complete resolution of nocturnal awakenings and increased sleep to 10 hours nightly. His CSHQ score improved from 75 to 34, allowing parents to resume typical nighttime routines. After 3 months, he developed night terrors and the medication was tapered.

Case 2: A 16-year-old female with Rett syndrome (MECP2 mutation) had lifelong severe sleep disruption characterized by night laughing, screaming, and terrors, which progressively strained family functioning. She failed melatonin, zolpidem,

mirtazapine, eszopiclone, clonidine, clonazepam, and gabapentin. After initiation of **trofinetide**—titrated slowly due to GI effects—she began sleeping through the night within 4 weeks. Nightly sleep increased from 2 to 9 hours, and her CSHQ score improved from 85 to 49. Eszopiclone and clonidine were discontinued, and melatonin was reduced. Marked gains in daytime cognition, potty training, and school engagement were reported, with benefits sustained for over 6 months.

Conclusion

These cases illustrate the potential efficacy of novel therapies—dual orexin receptor antagonists and trofinetide—in treating refractory insomnia in individuals with NDDs. They underscore the need for systematic research on sleep pharmacotherapy in this population, including long-term safety and impact on cognitive, behavioral, and family outcomes.

Support: None