



CASE REPORT

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## Addition of Lemborexant to Bromazepam Therapy for Chronic Insomnia in a Patient Receiving Tirzepatide for Metabolic Dysfunction-Associated Steatohepatitis: A Longitudinal Observational Study of Sleep Duration and Dream Occurrence

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### ABSTRACT

In a patient with chronic insomnia already under bromazepam 3 mg treatment, the addition of lemborexant 5 mg prolonged the sleep duration from 6.3 hours to 7.2 hours. The combination therapy of lemborexant and bromazepam might prolong sleep duration than using bromazepam alone in a metabolic dysfunction-associated steatohepatitis (MASH) patient under weekly subcutaneous tirzepatide (Mounjaro) treatment. Moreover, this literature highlights a potential association between the addition of lemborexant and the occurrence of dreams in a patient receiving chronic bromazepam therapy.

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### KEYWORDS

Tirzepatide; Lemborexant; Bromazepam; insomnia; dual orexin receptor antagonist; dream; sleep duration.

### Introduction

Insomnia is common in patients with metabolic disorders and may require pharmacological treatment [1]. Also, deprescribing and decreasing benzodiazepines (BZDs) usage is encouraged worldwide, according to the recent publication by Shuey, et al. [2]. Combination therapy using benzodiazepines (BZDs) and dual orexin receptor antagonists (DORAs), or switching from BZDs to DORAs, is increasingly encountered in clinical practice [3], but real-world data on sleep outcomes, such as sleep duration and quality of sleep, remain limited. Bromazepam is a reliable agent to treat chronic insomnia. Lemborexant is also a promising agent to deal with insomnia. The combination therapy of lemborexant 5 mg and bromazepam 3 mg was delivered to a 33-year-old patient with metabolic dysfunction-associated steatohepatitis (MASH) under subcutaneous tirzepatide (Mounjaro) treatment [4,5].

### Case Presentation

#### Part 1. Prolongation of sleep duration

The 33-year-old male patient, working as an anesthesiologist, presented with a history of MASH, gout and chronic insomnia. He reported no habitual alcohol consumption. Tirzepatide (Mounjaro) 2.5 mg was administered via weekly subcutaneous injection for MASH. The insomnia had been treated with oral bromazepam 3 mg once daily, taken 30–60 minutes before bedtime. Prior to December 23, 2025, the patient had never been exposed to lemborexant or other orexin receptor antagonists (ORAs). Beginning on December 24, 2025, lemborexant 5 mg was added before bedtime. Lemborexant was administered 30–60 minutes before bedtime in combination with bromazepam 3 mg. The patient recorded daily sleep duration by himself

between December 18, 2025 and January 2, 2026. The start of sleep was recorded as the time last seen by himself. The end of sleep was recorded as the time first seen after his arousal. The recorded data are as follows.

#### Sleep duration data

Group B: Bromazepam monotherapy:

12/18: 6 hours

12/19: 6 hours

12/20: 6 hours

12/21: 7 hours

12/22: 7 hours

12/23: 6 hours

Mean sleep duration: 6.3 hours (n=6)

Group B+D: Bromazepam + Lemborexant, combination therapy:

12/24: 8 hours

12/25: 7 hours

12/26: 6.5 hours

12/27: 6.5 hours

12/28: 6.5 hours

12/29: 6 hours

12/30: 8 hours

12/31: 8.5 hours

01/01: 6.5 hours

01/02: 7.5 hours

01/03: 8 hours

Mean sleep duration: 7.2 hours (n=11)

#### Part 2. Increased dream occurrence

Since January 1, 2026, the patient recorded whether dream

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occurred or not, by himself, until January 14. The recorded data are as Table 1.

**Table 1:** Dream occurrence between Group Bromazepam (B only) or Group Bromazepam plus Lemborexant (B+D).

	Group B only (n=4)	Group B+D (n=10)
Dream occurs	0/4 (0%)	7/10 (70%)
Dream does not occur	4/4(100%)	3/10 (30%)

## Discussion

Following the addition of lemborexant to solely bromazepam, the mean sleep duration increased from 6.3 hours to 7.2 hours. Furthermore, longer sleep episodes (equal or above 8 hours) were observed intermittently, which were not recorded during bromazepam monotherapy. These data suggest that the addition of lemborexant to bromazepam monotherapy is effective to prolong sleep duration in a patient with chronic insomnia and MASH under subcutaneous tirzepatide (Mounjaro) treatment.

According to current literatures, dual orexin receptor antagonists (DORAs), such as lemborexant, promote sleep by inhibiting wake-promoting orexin neurons [3]. The mechanism is distinct from benzodiazepines, which enhance GABAergic inhibitory neurotransmission [3]. The combination of these agents may theoretically offer additive or synergistic effects on sleep duration, sleep initiation and sleep maintenance.

Moreover, this literature highlights a potential association between the addition of lemborexant and the occurrence of dreams in a patient receiving chronic bromazepam therapy. Notably, no dream was reported on nights with bromazepam monotherapy, whereas dreams occurred on several (70%) nights with combined therapy of lemborexant and bromazepam. DORAs, such as lemborexant, tend to preserve or even enhance rapid eye movement (REM) sleep [6,7]. According to Kushida, et al., lemborexant significantly increased total sleep time in patient with insomnia and mild obstructive sleep apnea(OSA) [6]. As REM sleep supports cognition and emotional regulation, its preservation may have clinical implications, according to Yong Won Cho, et al., [7].

This literature provides a real-world clinical observation that may contribute to clinicians managing insomnia with combination pharmacotherapy, especially using BZD and DORA. More large scale studies are warranted to confirm the hypothesis that lemborexant could prolong sleep duration and enhance sleep quality in a patient taking bromazepam to treat insomnia.

## Conclusion

In a patient with chronic insomnia already under bromazepam 3 mg treatment, the addition of lemborexant 5 mg prolonged the sleep duration from 6.3 hours to 7.2 hours. Moreover, this literature revealed a potential association between the addition of lemborexant and the occurrence of dreams in a patient receiving chronic bromazepam therapy. The combination therapy of lemborexant and bromazepam might prolong sleep duration and increase sleep quality than using bromazepam alone in a metabolic dysfunction-associated steatohepatitis (MASH) patient under weekly subcutaneous tirzepatide (Mounjaro) treatment.

## References

1. Chasens ER, Imes CC, Kariuki JK, Luyster FS, Morris JL, et al. Sleep and Metabolic Syndrome. *Nurs Clin North Am.* 2021; 56(2): 203-217.
2. Shuey B, Anderson TS, Park TW. Implementing Benzodiazepine Deprescribing in the Primary Care Clinic. *JAMA Intern Med.* 2026; 186(1): 120-121.
3. Kanahara N, Tachibana M, Oda Y, Hasegawa T, Kimura A, et al. Successful Methods for Switching from a Benzodiazepine Receptor Agonist to a Dual Orexin Receptor Antagonist for the Treatment of Insomnias. *Clin Psychopharmacol Neurosci.* 2025; 23(4): 713-718.
4. Loomba R, Hartman ML, Lawitz EJ, Vuppalachchi R, Boursier J, et al. Tirzepatide for Metabolic Dysfunction-Associated Steatohepatitis with Liver Fibrosis. *N Engl J Med.* 2024; 391(4): 299-310.
5. Sanyal AJ, Newsome PN, Kliiers I, Østergaard LH, Long MT, et al. Phase 3 Trial of Semaglutide in Metabolic Dysfunction-Associated Steatohepatitis. *N Engl J Med.* 2025; 392(21): 2089-2099.
6. Kushida CA, Zammit GK, Cheng JY, Kumar D, Moline M. Effect of lemborexant on sleep architecture in participants with insomnia disorder and mild obstructive sleep apnea. *Sleep Med.* 2025; 127: 170-177.
7. Cho YW, Mak M, Cheng JY, Yamakawa N, Kumar D, et al. 0550 Lemborexant's Effects on Rapid Eye Movement (REM) Sleep Architecture in Asian and Non-Asian Adults with Insomnia: Comparative Analysis from 3 Studies. *Sleep.* 2025; 48(supp1): A240.