

From Evidence to Action: A Retrospective Chart Review of Prescribing Factors Associated with Extended-Release Buprenorphine Retention in an Integrated Clinic Setting

November 15, 2024

AMERSA Conference, Chicago, IL

Sami Hamdan MD, MPH

Co-authors: Kenneth Morford, MD, FASAM; Julia Shi, MD; Sarah Raffone; Jeanette M. Tetrault, MD; Lynn M. Madden, PhD, MPA



Disclosures

The authors have no conflicts of interest to disclose.

Extended-Release Buprenorphine (XR-bup)

- RBP-6000 approved 2017
 - Monthly abdominal subcutaneous injection
- Two dose regimens
 - 300 mg/300 mg/100 mg monthly
 - 300 mg monthly maintenance
- MOUD option with comparable outcomes to sublingual buprenorphine

Grande, Journal of Addiction Medicine, 2023
Lee, Journal of addiction medicine, 2023
Moss, Plos one, 2022
Morgan, Drug and Alcohol Dependence, 2021

Areas of Uncertainty

- Craving and withdrawal management
 - Probable contributor to loss to follow-up
- Sublingual buprenorphine supplementation
 - Limited data but evolving area

Peckham, Journal of Substance Abuse Treatment, 2021
Ling, Journal of Addiction Medicine, 2020

Study Aim

To explore prescribing factors which may be associated with treatment retention on extended-release buprenorphine (XR-bup)

Methods

- Chart review of patients actively enrolled in XR-bup program (RBP-6000) from March 2021-November 2023
 - Received ≥ 2 injections with prescription and appointment for the next monthly injection
- Site: An integrated primary care & opioid treatment program in New Haven, CT
- Source: clinic EHR & PDMP
 - Demographic data, clinician notes, prescribing data, and UDS

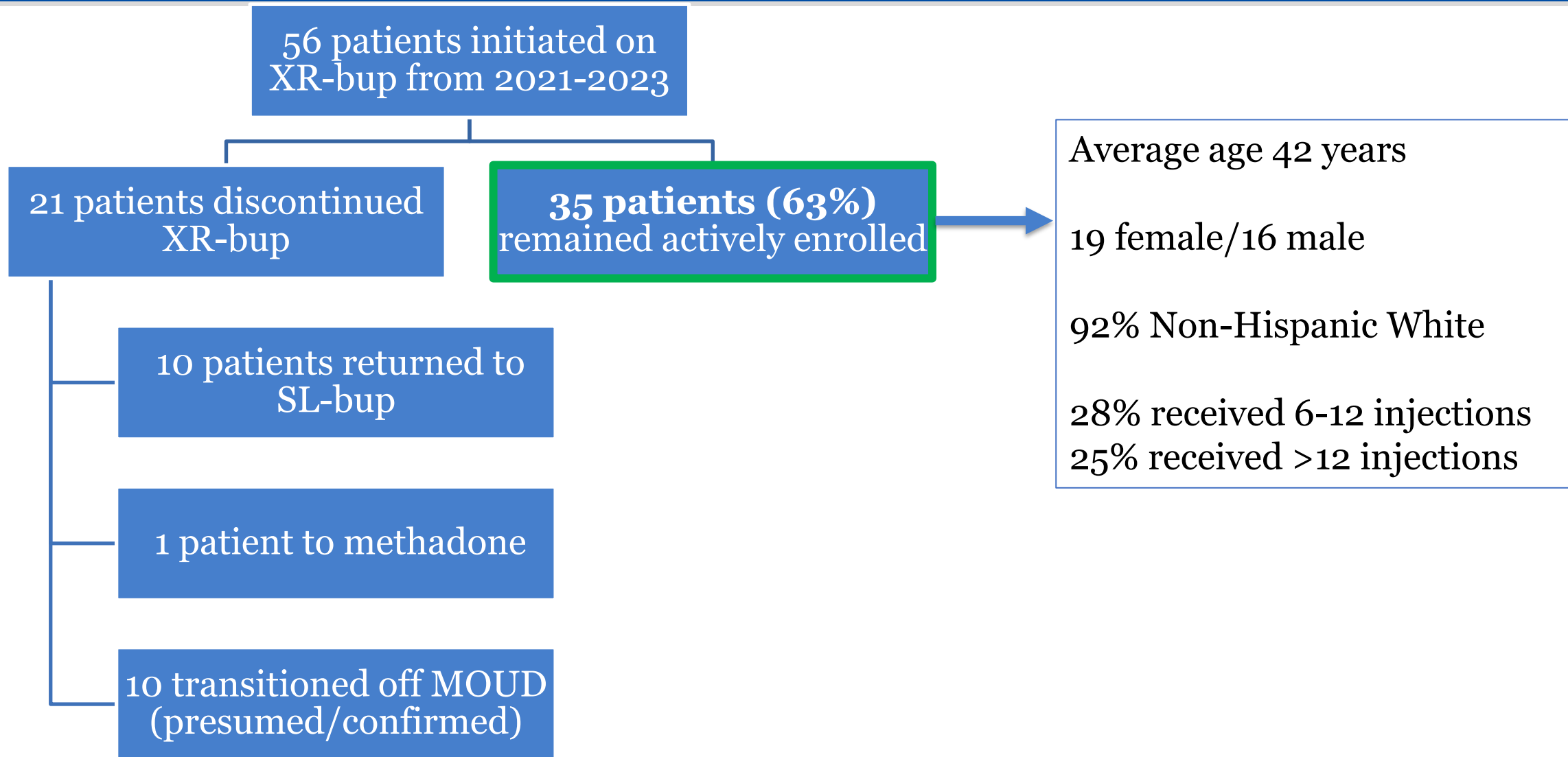
Chart Review

- Initial review
 - QI-focused review of program
 - Treatment retention: # of XR-bup injections received
 - Reasons for cessation of treatment
- Full chart review
 - Demographic data
 - Ongoing opioid use
 - Buprenorphine SL dose during XR-bup
 - XR-bup retention (number of injections) and dose

Chart Review Variables

- Treatment retention
 - Among actively enrolled patients, number who received 6-12 injections & >12 injections
- Opioid use while receiving XR-bup
 - UDS and self-reported as documented in clinician notes
- Dose regimen
 - Conventional dose (300 mg/300 mg/100 mg)
 - High dose (300 mg maintenance)
 - Conventional dose to high dose
 - High dose to conventional dose
- Supplemental SL-bup while receiving XR-bup

Results



Opioid Use and Symptoms on XR-Buprenorphine

Non- Prescribed Opioid use

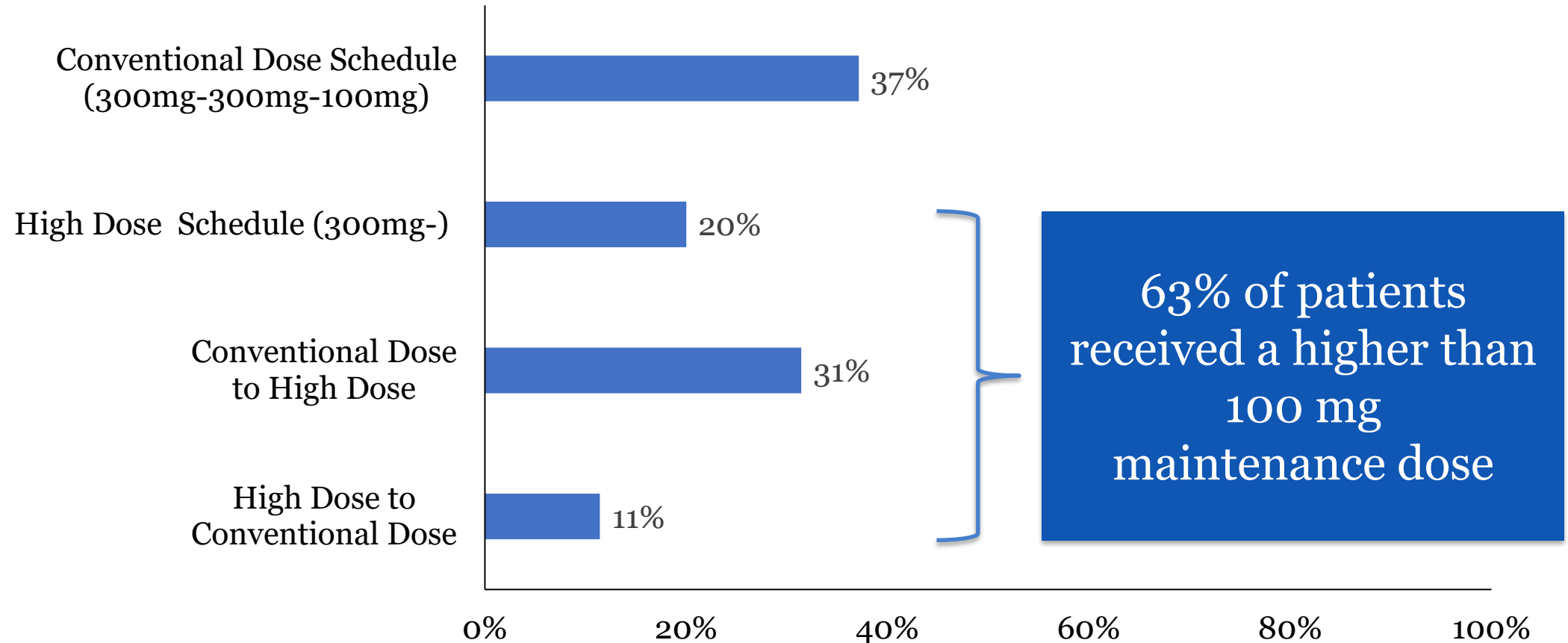
43% had either fentanyl positive UDS and/or self-reported opioid use

Craving and Withdrawal Symptoms

- Cravings: 23%
- Withdrawal symptoms: 37%

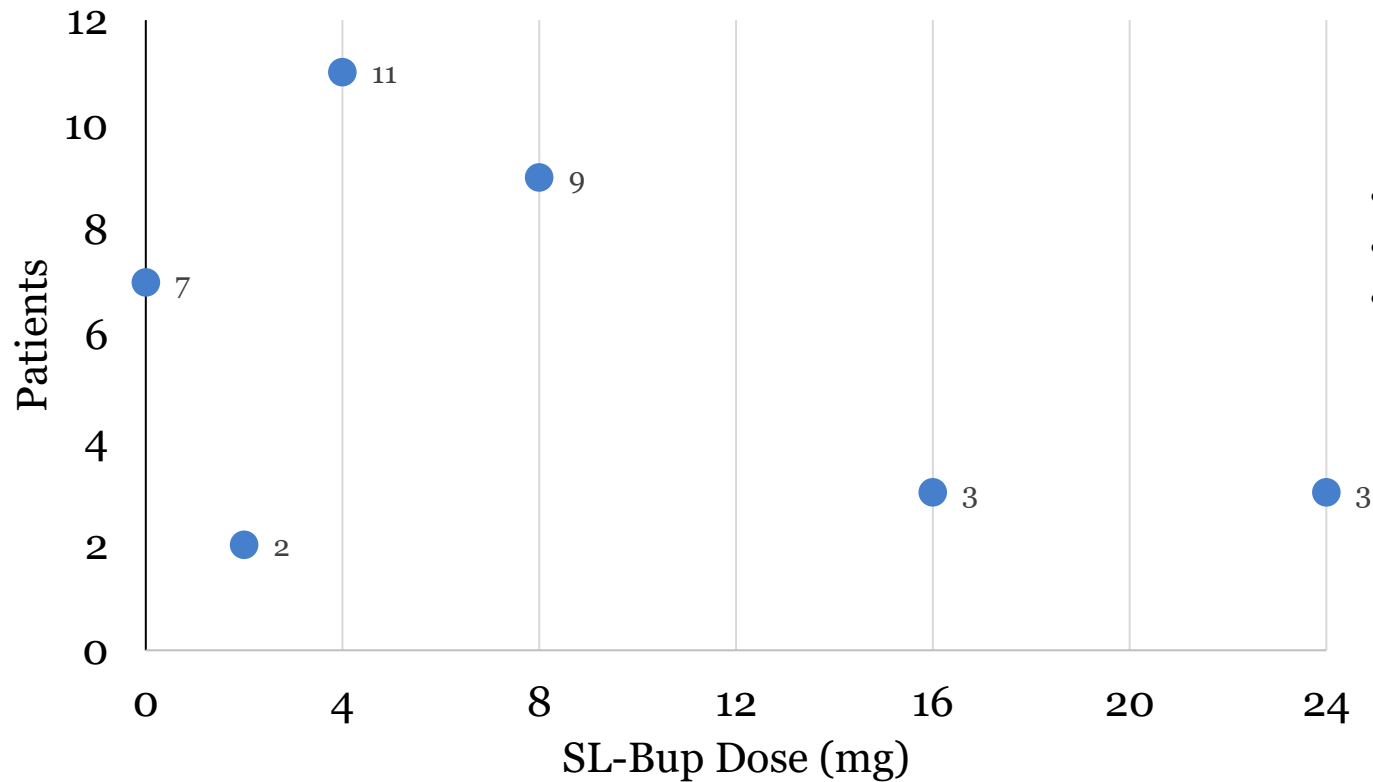
XR-Buprenorphine Dosing

Extended-release Buprenorphine Dose Regimen



Supplemental Sublingual Buprenorphine

SL-Buprenorphine Dose Variability



- 80% received SL buprenorphine
- Median dose 8 mg (2- 24 mg)
- Median duration 4 weeks (range 2 weeks-12 months)

Equitable Access to XR-Bup

- 92% Patients actively enrolled in XR-bup identified as non-Hispanic white
 - Not representative of both the organization and New Haven (50-60% identified as white)
 - Sublingual buprenorphine has historically been more accessible to white populations
- Understanding factors which contribute may improve access/retention for XR-bup

Conclusions

- More than half remained actively enrolled in treatment
- 28% of enrolled patients received 6-12 injections and 25% of enrolled patients received >12 injections
- Most patients actively enrolled in XR-bup program received patient-centered prescribing patterns
 - Flexibility with dose regimen
 - Flexibility with SL-buprenorphine dose and duration
- Future Directions
 - Analyze association between prescribing factors and treatment retention
 - Increase equitable access to XR-buprenorphine

Questions and Comments

- Thank you to Dr. Kenny Morford, Dr. Jeanette Tetrault, the study authors, and APT Foundation

References

- Andorn, A. C., Haight, B. R., Shinde, S., Fudala, P. J., Zhao, Y., Heidbreder, C., ... & Rutrick, D. (2020). Treating opioid use disorder with a monthly subcutaneous buprenorphine depot injection: 12-month safety, tolerability, and efficacy analysis. *Journal of clinical psychopharmacology*, 40(3), 231.
- Barnett, M. L., Meara, E., Lewinson, T., Hardy, B., Chyn, D., Onsando, M., ... & Morden, N. E. (2023). Racial inequality in receipt of medications for opioid use disorder. *New England Journal of Medicine*, 388(19), 1779-1789.
- Cunningham, C., Edlund, M. J., Fishman, M., Gordon, A. J., Jones, H. E., Langleben, D., & Femino, J. (2020). The ASAM national practice guideline for the treatment of opioid use disorder: 2020 focused update. *J Addict Med*, 14(2S Suppl 1), 1-91.
- Cuperfain, A. B., Katznelson, G., Costa, T., Wong, P., Beyraghi, N., George, T. P., ... & Chopra, N. (2023). Factors to guide the use of extended-release buprenorphine formulations for specific patient populations. *Journal of Substance Use*, 1-7.
- Grande, L. A., Cundiff, D., Greenwald, M. K., Murray, M., Wright, T. E., & Martin, S. A. (2023). Evidence on Buprenorphine Dose Limits: A Review. *Journal of Addiction Medicine*, 10-1097.
- Greenwald, M. K., Wiest, K. L., Haight, B. R., Laffont, C. M., & Zhao, Y. (2023). Examining the benefit of a higher maintenance dose of extended-release buprenorphine in opioid-injecting participants treated for opioid use disorder. *Harm Reduction Journal*, 20(1), 173.
- Haight, B. R., Learned, S. M., Laffont, C. M., Fudala, P. J., Zhao, Y., Garofalo, A. S., ... & Wiest, K. L. (2019). Efficacy and safety of a monthly buprenorphine depot injection for opioid use disorder: a multicentre, randomised, double-blind, placebo-controlled, phase 3 trial. *The Lancet*, 393(10173), 778-790.
- Heidbreder, C., Fudala, P. J., & Greenwald, M. K. (2023). History of the discovery, development, and FDA-approval of buprenorphine medications for the treatment of opioid use disorder. *Drug and Alcohol Dependence Reports*, 100133.
- Heil, J., Salzman, M., Hunter, K., Baston, K. E., Milburn, C., Schmidt, R., ... & Ganetsky, V. S. (2024). Evaluation of an injectable monthly extended-release buprenorphine program in a low-barrier specialty addiction medicine clinic. *Journal of Substance Use and Addiction Treatment*, 156, 209183.
- Huxley-Reicher Z, Lee K, Roy, P. Chan, CA. "#20 Extending Knowledge of LAI Buprenorphine with Dr. Ken Lee". The Curbsiders Addiction Medicine Podcast. <https://thecurbsiders.com/episode-list> August 31st, 2023
- Laffont, C. M., Ngaimisi, E., Gopalakrishnan, M., Ivaturi, V., Young, M., Greenwald, M. K., & Heidbreder, C. (2022). Buprenorphine exposure levels to optimize treatment outcomes in opioid use disorder. *Frontiers in Pharmacology*, 13, 1052113.
- Lee, K., Zhao, Y., Merali, T., Fraser, C., Kozicky, J. M., Mormont, M. C., & Conway, B. (2023). Real-world Evidence for Impact of Opioid Agonist Therapy on Nonfatal Overdose in Patients with Opioid Use Disorder during the COVID-19 Pandemic. *Journal of addiction medicine*, 17(6), e374-e381.
- Ling, W., Nadipelli, V. R., Aldridge, A. P., Ronquest, N. A., Solem, C. T., Chilcoat, H., ... & Heidbreder, C. (2020). Recovery from opioid use disorder (OUD) after monthly long-acting buprenorphine treatment: 12-month longitudinal outcomes from RECOVER, an observational study. *Journal of Addiction Medicine*, 14(5), e233.
- Ling, W., Nadipelli, V. R., Solem, C. T., Ronquest, N. A., Yeh, Y. C., Learned, S. M., ... & Heidbreder, C. (2020). Effects of monthly buprenorphine extended-release injections on patient-centered outcomes: A long-term study. *Journal of Substance Abuse Treatment*, 110, 1-8.
- Lintzeris, N., Dunlop, A. J., Haber, P. S., Lubman, D. I., Graham, R., Hutchinson, S., ... & Tiberg, F. (2021). Patient-reported outcomes of treatment of opioid dependence with weekly and monthly subcutaneous depot vs daily sublingual buprenorphine: a randomized clinical trial. *JAMA Network Open*, 4(5), e219041-e219041.
- Lintzeris, N., Dunlop, A., & Masters, D. (2019). Clinical Guidelines for Use of Depot Buprenorphine (Buvidal and Sublocade) in the Treatment of Opioid Dependence. NSW Ministry of Health.

References

- Lofwall, M. R., Walsh, S. L., Nunes, E. V., Bailey, G. L., Sigmon, S. C., Kampman, K. M., ... & Kim, S. (2018). Weekly and monthly subcutaneous buprenorphine depot formulations vs daily sublingual buprenorphine with naloxone for treatment of opioid use disorder: a randomized clinical trial. *JAMA internal medicine*, 178(6), 764-773.
- Lofwall, M. R., Young, J. L., Hansen, Z., Wachman, E. M., Wilder, C., Guille, C., ... & Winhusen, T. J. (2023). What to Expect With Pregnant or Postpartum Prescribing of Extended-Release Buprenorphine (CAM2038). *Journal of Clinical Gynecology and Obstetrics*, 12(3), 110-116.
- Morgan, J. R., Walley, A. Y., Murphy, S. M., Chatterjee, A., Hadland, S. E., Barocas, J., ... & Assoumou, S. A. (2021). Characterizing initiation, use, and discontinuation of extended-release buprenorphine in a nationally representative United States commercially insured cohort. *Drug and alcohol dependence*, 225, 108764.
- Moss, L. M., Algera, M. H., Dobbins, R., Gray, F., Strafford, S., Heath, A., ... & Groeneveld, G. J. (2022). Effect of sustained high buprenorphine plasma concentrations on fentanyl-induced respiratory depression: a placebo-controlled crossover study in healthy volunteers and opioid-tolerant patients. *Plos one*, 17(1), e0256752.
- Nasser, A. F., Greenwald, M. K., Vince, B., Fudala, P. J., Twumasi-Ankrah, P., Liu, Y., ... & Heidbreder, C. (2016). Sustained-release buprenorphine (RBP-6000) blocks the effects of opioid challenge with hydromorphone in subjects with opioid use disorder. *Journal of clinical psychopharmacology*, 36(1), 18.
- Peckham, A. M., Kehoe, L. G., Gray, J. R., & Wakeman, S. E. (2021). Real-world outcomes with extended-release buprenorphine (XR-BUP) in a low threshold bridge clinic: a retrospective case series. *Journal of Substance Abuse Treatment*, 126, 108316.
- Radosh, L., Gosala, S., & Santoro, W. (2022). Extended-release buprenorphine: sharing clinical pearls, protocols and possibilities from 3000 injections. In 53rd Annual Conference of the American Society of Addiction Medicine.
- Ritvo, A. D., Calcaterra, S. L., & Ritvo, J. I. (2021). Using extended release buprenorphine injection to discontinue sublingual buprenorphine: a case series. *Journal of addiction medicine*, 15(3), 252-254.
- Stein, M. D., VanNoppen, D., Herman, D. S., Anderson, B. J., Conti, M., & Bailey, G. L. (2022). Retention in care for persons with opioid use disorder transitioning from sublingual to injectable buprenorphine. *Journal of Substance Abuse Treatment*, 136, 108661.
- SUBLOCADE (buprenorphine extended-release) injection, for subcutaneous use, CII
- Vidyasagar, N., Bunting, S. R., Arora, V. M., & Ari, M. (2024). Availability of Long-Acting Injectable Buprenorphine at Substance Use Treatment Facilities in 2021. *JAMA*.
- Weimer, M. B., Herring, A. A., Kawasaki, S. S., Meyer, M., Kleykamp, B. A., & Ramsey, K. S. (2023). ASAM clinical considerations: buprenorphine treatment of opioid use disorder for individuals using high-potency synthetic opioids. *Journal of addiction medicine*, 17(6), 632-639.