

Predicting Pain Intensity Following Discontinuation of Long-term Opioid Therapy Among Patients with and without Substance Use Disorders

Crystal Lederhos Smith^{1,2}, Travis Lovejoy^{3,4,5}, Julia Holloway³, Benjamin Morasco^{3,4}, Steven Dobscha^{3,4}, Phoebe Tham¹, Sterling McPherson^{1,2}

¹ Elson S. Floyd College of Medicine, Washington State University, USA; ² Program of Excellence in Addictions Research, Washington State University, USA; ³ Center to Improve Veteran Involvement in Care, VA Portland Health Care System, USA; ⁴ Department of Psychiatry, Oregon Health & Science University, USA; ⁵ School of Public Health, Oregon Health & Science University, USA

Background

- Prescription opioid overdose deaths in the United States (US) have increased consistently since 1999.
- This trend paralleled increases in opioid prescribing from the early 1990s through 2012, although there have been subsequent modest declines in prescribing since 2013.
- Declining rates of opioid prescribing are the result of fewer new opioid initiations and, in large part, discontinuation of existing long-term opioid therapy (LTOT).
- Recently, we established that, among patients with chronic pain, with and without substance use disorders, ratings of pain do not significantly change in the year following opioid discontinuation. However, pain experiences post-discontinuation vary across patients.
- **Little is known about predictors of pain intensity following discontinuation of LTOT.**

Methods

- Retrospective electronic health record review on a national sample of patients (N=600) from the U.S. Department of Veterans Affairs who discontinued LTOT in 2012.
- Half of patients had an alcohol or other substance use disorder (SUD)
- Half had no SUD but were matched to the SUD sample on other demographic and clinical characteristics using propensity scores.
- Data included pain intensity ratings (0-10 numeric rating scale)
- Obtained during routine outpatient appointments in the year prior to and following discontinuation of LTOT

Previous Findings

Growth mixture models identified **four groups of post-discontinuation pain intensity trajectories**:

- 1) Subclinical pain (**SUB**; 30% of sample; average pain at discontinuation=0.05)
- 2) Mild clinically-significant pain (**MILD**; 17%; average pain=3.59)
- 3) Moderate clinically-significant pain (**MOD**; 27%; average pain=5.97)
- 4) Severe clinically-significant pain (**SEVERE**; 26%; average pain=7.83).

Pain trajectories in each of the four groups remained relatively constant over time.

Conclusions

These findings identify similarities and differences in the predictive profiles for each of the post-discontinuation pain trajectory classes.

This information may help clinicians and interventionists select patients who would benefit from additional, targeted, integrated pain treatment options during and after prescription opioid discontinuation.

Results

Multinomial logistic regression identified significant factors influencing risk of membership in each of the higher pain classes **compared to SUB**

-Having an **SUD** diagnosis increased the risk of membership in **MILD** (RR=1.85; 95% CI=1.07-3.22; p<0.05).



-Risk of membership in **MOD** and **SEVERE** classes was higher for patients with **greater pre-discontinuation average pain** (RR=1.36; 95% CI=1.22-1.54; p<0.05, RR=1.39; 95% CI=1.24-1.56; p<0.05, respectively).



Three factors were related to **increased probability of membership in SUB**, compared to **MILD**:

- **older age** (RR=0.97; 95% CI=0.95-1.00; p<0.05)
- **black race** (RR=0.33; 95% CI=0.14-0.79; p<0.05)
- **psychotic disorder** diagnosis (RR=0.22; 95% CI=0.06-0.77; p<0.05).

Patients had a **greater probability of membership in SUB** than both **MOD** and **SEVERE** **discontinued LTOT of their own volition** (RR=0.44; 95% CI=0.22-0.88; p<0.05, RR=0.35; 95% CI=0.16-0.75; p<0.05, respectively).

Risk of membership in SUB was greater than risk for membership in MOD for patients with a **psychotic disorder** (RR=0.29; 95% CI=0.11-0.81; p<0.05) and also greater than risk of membership in SEVERE for patients with more pain clinic attendance (RR=0.45; 95% CI=0.26-0.78; p<0.05).

