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Research paper

A longitudinal study of depression among middle-aged and senior patients initiating chronic opioid therapy

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ABSTRACT

Background: Improved understanding how depressive symptoms change with sustained opioid use is needed.
Methods: We prospectively assessed patients 45 years or older initiating chronic opioid therapy (COT) at baseline and at 4 and 12 months, differentiating recent COT initiators (n=748) and continuing users (n=468). Level of opioid use before 12-month follow-up was classified as regular/higher-dose, intermittent/lower-dose, or minimal/no use. Depressive symptoms were assessed using the Patient Health Questionnaire-8 (PHQ-8).
Results: Depressive symptoms decreased, on average, from baseline to 12 months regardless of level of opioid use. COT patients with regular/higher-dose compared to those with intermittent/lower-dose opioid use (who had similar pain outcomes) did not differ in PHQ-8 scores at 12 months (adjusted mean difference −0.14, 95% CI, −1.07, 0.78 for COT initiators). At 12 months, COT patients with intermittent/lower-dose use had higher adjusted PHQ-8 scores than did those with minimal/no opioid use (adjusted mean difference 0.77, 95% CI, 0.03–1.52 for COT initiators). However, 77% of patients who discontinued opioids cited improved pain as a reason for discontinuation, while 21% cited negative emotional effects of opioids as a reason for discontinuation. Discontinuation was more common among persons who, at baseline, attributed 3 or more depressive symptoms to opioid use.
Limitations: Results are relevant to older COT patients receiving low to moderate opioid doses.
Conclusions: Depressive symptoms did not increase with sustained opioid use. Depressive symptoms were not higher with regular/higher-dose compared to intermittent/lower-dose use. Persons who perceived negative effects of opioids on emotions more often discontinued their use.

1. Introduction

Opioid analgesic use is related to depression (Scherrer et al., 2014; Merrill et al., 2012; Scherrer et al., 2015; Scherrer et al., 2016), but prospective studies have rarely assessed depressive symptoms over time among persons initiating long-term opioid use for chronic pain. Due to increased risks of depression among persons with chronic pain (VonKorff and Simon, 1996), it is important to understand whether initiation of long-term use of opioid analgesics increases depressive symptoms.

Previous studies have yielded inconsistent findings. A study using electronic health records (EHR) found that sustained opioid use was associated with increased risk of a new depression diagnosis (Scherrer et al., 2014). Merrill et al. (2012) found that, controlling for pain severity, COT patients receiving opioid doses ≥50 mg morphine equivalent dose (MED) per day were more often depressed than were patients on lower doses, and that the higher dose COT patients more often attributed depressive symptoms to opioid use. In a prospective study of chronic low back pain patients, those who increased opioid dose to greater than 50 mg MED/day had 2.7 times the odds of an elevated depressive symptom score relative to chronic low back pain patients not using opioids, whereas those who used opioids at lower

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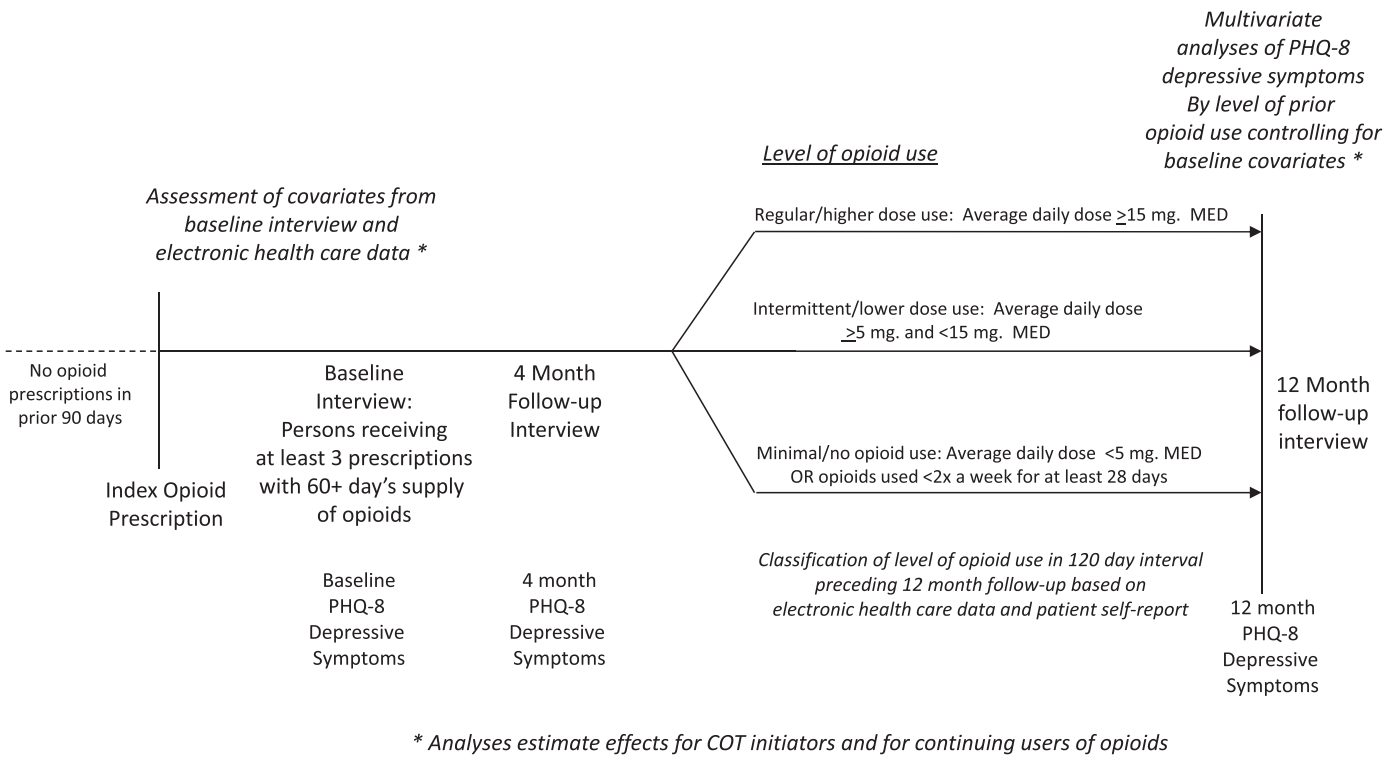

Fig. 1. Study design.

doses were not at increased risk (Scherrer et al., 2015). A retrospective study found that duration of opioid use predicted a new depression diagnosis but opioid dose did not (Scherrer et al., 2016). Because depression and chronic pain are related (Von Korff and Simon, 1996), it is difficult to determine whether and how depressive symptoms are influenced by long-term use of opioids, because depressive symptoms may be increased by pain or by opioid use. A prospective longitudinal study of persons initiating long-term opioid use with direct assessment of depressive symptoms provides an opportunity to study the relationships of long-term opioid use and depressive symptoms.

In this longitudinal study of chronic pain patients identified as initiating COT (Turner et al., 2016; Von Korff et al., 2016), we assessed depressive symptoms at follow-up. We hypothesized that: persons using opioids regularly and/or at higher doses prior to 12-month follow-up would report higher levels of depressive symptoms at 12-month follow-up compared to persons using opioids intermittently and/or at lower doses. Because we previously found that COT patients in this study cohort with regular/higher dose opioid use and those with intermittent/lower dose opioid use did not differ in pain intensity or interference ratings at baseline or at 4 or 12 months (Turner et al., 2016), there was a unique opportunity to assess whether COT patients with comparable pain ratings who differed in level of opioid use differed in their depressive symptom levels at 12 month follow-up.

We also assessed whether persons who sustained regular or intermittent use of opioids had greater depressive symptom severity compared to persons with no or minimal opioid use by 12 months. However, this comparison was confounded by differences in pain outcomes, as COT patients who stopped using opioids reported lower pain intensity and interference than COT patients who sustained regular or intermittent opioid use (Turner et al., 2016).

In carrying out these analyses we evaluated whether relationships between depressive symptoms and level of opioid use differed between persons truly initiating COT and those found to be continuing prior opioid use. Because COT patients may perceive that opioids cause mood disturbance, and alter their opioid use accordingly, we also assessed whether attribution of depressive symptoms to opioids at baseline predicted opioid discontinuation over the following year.

2. Methods

2.1. Study setting and study sample

We analyzed data from the Middle-Aged/Seniors Chronic Opioid Therapy (MASCOT) study (Turner et al., 2016; Von Korff et al., 2016), a prospective observational cohort study of persons identified as initiating a new episode of COT for chronic pain. The study was conducted at Group Health, a not-for-profit health care delivery system in Washington State.

Potential study participants aged 45 years or older were identified using Group Health's EHR. Patients were eligible if they had been enrolled at Group Health for at least 1 year and, in the 120 days prior to sample selection, had filled at least 3 prescriptions for opioids (an initial index prescription, followed by at least 2 more prescriptions) totaling at least 60 days' supply of opioid medication. Because we were interested in persons initiating a new COT episode, we required that no opioid prescriptions had been dispensed in the 90 days prior to the date of the index prescription. Patients receiving ongoing cancer treatment were not eligible for the study. Specifically, we excluded persons who had received cancer diagnoses on 2 or more visits in the prior year or who were receiving hospice or nursing home care at the time of sampling.

Participants remained eligible if, when screened by telephone, they reported taking prescription analgesics on at least 7 days in the prior 2 weeks. Patients were excluded if they: did not speak English; were incapable of completing a telephone interview due to physical, mental or hearing impairments; were no longer enrolled at Group Health; or planned to disenroll in the coming year. All MASCOT study procedures were approved by the Group Health Institutional Review Board. Informed consent for the telephone surveys and use of EHR data was obtained from each participant. Additional information regarding MASCOT methods is provided in prior reports (Turner et al., 2016; Von Korff et al., 2016).