Title: Investigation of Potential Prognostic Factors for Long-Term Opiate Use in Patients with Low Back Pain

Abstract Body:

Purpose/Hypothesis: Low back pain (LBP) is one of the most common reasons for opioid prescription in primary care. Prognostic studies have explored the relationship between a variety of patient factors and long-term opioid use in individuals with LBP. Despite evident associations, to our knowledge, no studies have explored the direct prognostic relationship between prior opioid exposure or the volume of prior opioid use and long-term use in people with LBP. Only one study has explored the association between baseline modified Oswestry Disability Index (ODI) score and long-term opioid use. The objective of this study was to explore these potentially prognostic factors, with the goal to develop a clinical prediction rule to aid clinicians in identifying individuals at higher risk for long-term opioid use.

Number of Subjects: 709

Methods: Participants with LBP referred to a self-management class at a physical therapy clinic were evaluated in a retrospective cohort study utilizing data from the Military Health System Data Repository. Independent prognostic variables were dichotomized by prior opioid exposure, heavy pre-index opioid use, and moderate or greater baseline modified ODI score ($\geq 21\%$). A cut-point for heavy pre-index use was determined from the median value in this population. Univariate regression analyses were performed to determine odds ratios (OR) and establish significance. Reverse stepwise logistic regression was then used to combine these factors and attempt to establish a clinical prediction rule (CPR).

Results: Participants were primarily male active duty members. Heavy pre-index opioid use was the strongest predictor of 12-month opioid use. Prior opioid exposure and a moderate or greater baseline ODI score also predicted long-term use. The combined variable model indicated a moderate prognostic relationship for 12-month opioid use when combining any 2 of these conditions. Having one of three of these conditions at baseline was not a significant predictor of long-term use in the combined model.

Conclusion: Prior opioid exposure, heavy pre-index opioid use, and a moderate or greater baseline ODI score may all be predictive of long-term opioid use in patients with LBP. Patients presenting with any of these conditions at baseline are significantly more likely to use opioids at 12-months. Future prognostic studies should continue to examine the effects of these prognostic factors in subsequent populations.

Clinical Relevance: Study findings support the screening of these identified prognostic factors to assist clinicians with predicting risk for long-term opioid use in patients with LBP. Considering the multitude of negative health outcomes and the lack of efficacy associated with longitudinal opiate use, equipping clinicians with a means of identifying at risk individuals is helpful to aid with targeting interventions, and to begin reducing the impact of the current opiate epidemic.