Pre-operative neuropathic pain predicts ongoing opioid use in previously opioid naïve hip and knee arthroplasty patients at 1 year

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INTRODUCTION:
Most patients undergoing hip (THA) and knee arthroplasty (TKA) are prescribed opioid analgesia post-operatively, with the expectation that use will be limited to the early post-operative period. However, it is known that some patients have persistent pain following THA and TKA, which may prolong opioid use. Furthermore, post-operative opioid use has been implicated in long term opioid dependency and addiction, and is further associated with increased healthcare utilisation and costs. While pre-operative opioid use is a known risk factor for prolonged post-operative use, the likelihood of persistent use in previously opioid naïve patients is not well understood.
The main purpose of this study was to determine the proportion of patients who were opioid naïve prior to hip and knee arthroplasty and who are still using opioids medications at one year after surgery and whether, any baseline factors predict the like hood of persistent opioid use.
METHODS:
This was a retrospective analysis of a prospectively-collected database of 1011 patients who underwent total hip or knee arthroplasty at single academic institution between October 1, 2014, and December 1, 2022. Institutional protocols favored opioid-sparing multimodal anesthesia and analgesia whenever possible. A range of demographic variables and patient-reported outcome measures were collected pre-operatively, as well as at 6 weeks, 3 and 6 months and 1 year post-surgery. Patients were stratified based on whether they did or did not use opioid pain medications pre-operatively. Descriptive statistics were obtained. Multivariable logistic regression was used to evaluate whether any of a range of baseline factors were predictive of opioid use at 1 year in the previously opioid naïve cohort.
RESULTS:
One thousand one hundred and ninety three patients were included (643 knees and 550 hips), 72% (861) of whom were opioid naïve before surgery. Of those who were opioid naïve, 5% (44) were still consuming opioids one year after surgery. On multivariable analysis, the only significant predictor of persistent opioid use at 1 year was the preoperative presence of neuropathic pain as measured using the painDETECT instrument (p=0.035). 80% of those who were still using opioids daily at 1 year had possible or likely neuropathic pain at baseline, as compared to 36% of those using opioids sometimes and 28% of those no longer using at all. The type of arthroplasty (TKA vs THA) was not a significant predictor of persistent opioid use.
DISCUSSION AND CONCLUSION:
A relatively small proportion of patient who undergoing hip and knee arthroplasty who are opioid naïve prior to surgery will continue to use them at one year. The presence of neuropathic pain prior to surgery is associated with a higher likelihood of persistent opioid use, with four out of five patients with persistent daily opioid use having an elevated baseline painDETECT score. Clinicians and surgeons should consider screening for preoperative neuropathic pain, and be aware of the elevated risk of persistent opioid use in this subgroup of patients.