

Comment: This study provides additional information on appropriate interpretation and utilization of high-sensitivity troponin assays. Simply, it helps us answer the question: at a given initial and subsequent troponin value, what are the chances that our patient will have an acute myocardial infarction within 30 days? The tool derived appears to be a relatively simple to use method of risk stratification based entirely on objective data. Further external validation studies are needed to verify results. Additionally, studies comparing this tool to currently validated methods of risk stratification could prove beneficial.

□ CHRONIC USE OF TRAMADOL AFTER ACUTE PAIN EPISODE: COHORT STUDY.

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BMJ. 2019;365:11849



Tramadol has traditionally been thought to be less habit forming with fewer side effects than other short acting opioids. Recent studies, however, have suggested that tramadol may actually have an increased risk for long-term abuse.

The aim of this observational, retrospective study was to determine the risk for long-term use of opioids after the use of tramadol for acute pain post operatively compared to other opiate medications. This study evaluated post-operative (post-op) opiate prescriptions from an insurance database that included both privately insured and Medicare patients from January 1, 2009 to June 30, 2018. Opioid naive adults who were discharged with an opioid prescription after undergoing elective surgery and enrolled in the insurance 6 months prior to the surgery were included in the study. A wide range of elective surgeries was included, such as cholecystectomies, inguinal hernia repair, orthopedic procedures, and hysterectomies with the goal to provide a diverse spectrum of procedures with different expected levels of post-op pain. Exclusion criteria was having an opiate prescription filled in the 6 months before surgery, inpatient stay >1 day pre-op or >7 days post-op, having more than one surgery, having a non-cancer surgery in a patient with cancer, enrolled in hospice care, discharge to a nursing facility, or disenrollment in the insurance within 90 days post-op. The prescriptions were categorized into five groups: no opioid fill, tramadol only, other short acting opioids, other short acting opioids plus tramadol, or long acting opioids. The outcome of long-term opioid use was categorized into three groups: additional use after surgery (opioid refill within 90-180 days post-op), persistent use after surgery (any opioid use within 180 days post-op and continued for at

least 90 days), or long term opiate use as defined by the CONSORT definition (any opioid use within 180 days and continued for at least 90 days with either at least 10 opioid fills or at least 120 day opioid supply).

There were 444,764 patients that met the inclusion criteria, of which 357,884 patients were discharged with opioid prescriptions. Most common prescriptions were short acting opioids other than tramadol (74.9%), no opioid fill (19.5%), tramadol (3%), long acting opioid (1.3%), and short acting opioids plus tramadol (1.2%). The average amount of opioids prescribed in morphine milligram equivalents (MME) was 225, which is equivalent to 45 tablets of 5 mg hydrocodone or 30 tablets of 5 mg oxycodone. The adjusted risk ratio for additional opioid use, using short acting opioids other than tramadol for reference, demonstrated 1.06 (95% CI 1.0 to 1.13) risk with tramadol alone and 1.05 (95% CI 0.96 to 1.14) risk for tramadol plus another short acting opioid. The adjusted risk ratio for persistent opioid showed an adjusted risk ratio of 1.47 (95% CI 1.25 to 1.69) risk for tramadol alone and 1.04 (95% CI 0.86 to 1.21) risk for tramadol plus another short acting opioid. The adjusted risk ratio for long term opiate use by the CONSORT definition showed a 1.41 (95% CI 1.08 to 1.75) risk for tramadol alone and 1.40 (95% CI 1.05 to 1.74) risk for tramadol plus another short acting opioid. Limitations of this study include inability to know actual opioid use since it only evaluated prescriptions filled, inability to generalize findings outside of privately insured and Medicare patients undergoing elective surgery, and inability to ascertain reasons patients may have received additional opioid prescriptions.

The authors concluded that tramadol has similar risk, if not higher, for the development of long term opioid use and should be used with caution for management of pain, similar to other opiates.

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Comment: This study suggests that a similar or higher risk exists for long-term opiate use if patients receive tramadol for post-operative pain rather than other short-term opiates. Selection bias does limit the validity of these results but this does reiterate that we should be cautious when prescribing all opioids, including tramadol. A prospective study, ideally a randomized trial, would be needed to shed further light on this topic.