

Study finds higher risks of readmission, mortality among surgical patients discharged with opioids

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A research team comprising members from the Department of Surgery, Department of Pharmacology and Pharmacy, Department of

Anesthesiology, Department of Family Medicine and Primary Care, School of Clinical Medicine, LKS Faculty of Medicine, the University of Hong Kong (HKUMed), and Laboratory of Data Discovery for Health (D²4H) has conducted a retrospective cohort study to explore the association between opioid prescription at discharge and persistent opioid use, postoperative health service utilization and mortality in Hong Kong.

Use of opioids at discharge in showed clinical risks to increase persistent [opioid](#) use, unplanned health service utilization, and mortality. The findings are now published in the [British Journal of Anaesthesia](#).

Current CDC Clinical Practice Guideline for Prescribing Opioids suggests [opioid analgesics](#) to those with moderate to [severe pain](#) following surgery, but opioid use may increase health care utilization, the risks of death and other adverse events. However, real-world evidence on the effects of opioid use at discharge in patients who undergo surgery is scarce.

Research findings

The study analyzed data from a territory-wide retrospective cohort of patients in Hong Kong who underwent surgery between 1 January 2000 and 30 November 2020, sourced from Hospital Authority electronic health records. This study included and analyzed 438,128 patients who met the study criteria and underwent surgical procedures during the observation period. Of all [surgical patients](#), 32,932 (7.52%) filled an [opioid prescription](#) at discharge, and 405,196 (92.48%) were discharged without opioids.

Among patients who were discharged on opioids and those who were not, 9.82% and 3.11% of patients had persistent opioid use after surgical discharge, 12.60% and 8.66% of patients occurred emergency

department visits within 30 days, 17.75% and 13.00% had hospital readmission within 30 days, and 1.68% and 1.07% died within 30 days after surgery, respectively.

Consequently, patients who received opioid prescriptions were observed to have a significantly higher odds of developing persistent opioid use. Moreover, prescribing opioids on discharge increased the odds of 30-day emergency department visits, 30-day readmission, and 30-day all-cause mortality.

Significance of the study

"Although the study shows adverse effects of opioid use, opioids may be a viable option for postoperative pain management in those patients discharged from major surgery. In addition, patients should engage in discussions with clinicians, regarding important issues on opioid use such as the duration of opioid use, concerns regarding side effects, the option of using multimodal analgesia incorporating more than one pharmacological class of analgesic medications that act by different mechanisms with a lower initial dosage, exploring alternative pain management methods, and scheduling follow-up appointments for appropriate adjustments.

"These exchanges facilitate informed decision-making, allowing patients to carefully evaluate the advantages and disadvantages of different treatment options. To mitigate the risk of developing opioid dependence or addiction, patients may consider alternative pain management strategies such as non-opioid pain relief medications, [physical therapy](#), and [cognitive-behavioral therapy](#), as well as discuss with doctors to collaboratively develop a plan that weighs the benefits of pain relief against the associated risks before resorting to [opioid use](#)," explained Professor Brian Lang Hung-hin, Li Shu Fan Medical Foundation Professor in Surgery, Department of Surgery, School of Clinical

Medicine, HKUMed.

"In conclusion, this [retrospective cohort study](#) of surgical patients showed that the use of opioids at discharge highlighted the impact on patients who consider pain management following their discharge from surgery. The increased health care utilization and worsened clinical outcomes following post-operative use of opioids supports the optimal use of opioids," remarked Dr. Carlos Wong King-ho, Honorary Assistant Professor of the Department of Pharmacology and Pharmacy, HKUMed.

"Multi-modal analgesia with non-opioid-based analgesics and regional block, with or without opioids, should be considered as alternatives for managing postoperative pain," added Professor Cheung Chi-wai, Peter Hung Professor in Pain Research, Department of Anaesthesiology, School of Clinical Medicine, HKUMed.

More information: Xiaodong Liu et al, Discharge of postoperative patients with an opioid prescription is associated with increased persistent opioid use, healthcare expenditures and mortality: a retrospective cohort study, *British Journal of Anaesthesia* (2023). [DOI: 10.1016/j.bja.2023.05.026](#)

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