

The risk of preoperative central nervous system acting medications on delirium following hip or knee surgery: A matched case-control study

Gizat Molla Kassie¹, Elizabeth Roughead², Tuan Nguyen³, Nicole Pratt³, and Lisa Kalisch Ellett²

¹University of South Australia Division of Health Sciences

²University of South Australia

³School of Pharmacy and Medical Sciences

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Abstract

Aim: To examine the risk of individual central nervous system acting medicines used preoperatively on delirium after hip or knee surgery. **Methods:** A matched case-control study was conducted using data from the Australian Government Department of Veterans' Affairs. We included people 65 years or older who had knee or hip surgery between 2000 and 2019. Cases were people with hip or knee surgery who developed postoperative delirium and controls were people with hip or knee surgery, but did not develop postoperative delirium. Use of medicines including anxiolytics, sedative, and hypnotics, opioid analgesics and antidepressants prior to surgery was compared between cases and controls. **Results:** Cases were more likely to be exposed to nitrazepam (OR=1.88, 95%CI=1.30-2.73), sertraline (OR=1.53, 95%CI=1.22-1.91), mirtazapine (OR=1.48, 95%CI=1.18-1.87), venlafaxine (OR=1.56, 95%CI=1.12-2.18), citalopram (OR=1.61, 95%CI=1.24-2.09), escitalopram (OR=1.39, 95%CI=1.04-1.86) or fluvoxamine (OR=3.57, 95%CI= 1.65-7.75) prior to surgery than controls. At the class level, exposure to benzodiazepines (OR=1.20, 95%CI=1.05-1.37) and antidepressants (OR=1.64, 95%CI=1.47-1.83) prior to surgery was significantly higher in cases than in controls. The numbers needed to be treated to harm in the 85 years or older age group for one additional delirium case was 20 for sertraline, 17 for citalopram, 19 for mirtazapine and 10 for nitrazepam. **Conclusion:** People who developed delirium following hip or knee surgery were more likely to be exposed to nitrazepam, sertraline, mirtazapine, venlafaxine, citalopram, escitalopram or fluvoxamine at the time of admission for surgery. Planning to reduce use of these medicines well prior to surgery may decrease the risk of postoperative delirium.

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