Case Studies from the Medical Examiner

Mixed Drug Overdose Leads to Patient Death

Fall 2021

Case Studies from the Medical Examiner are a deliverable of the collaborative work of the Adult Inquest Review Committee. The College of Pharmacists of Manitoba, the College of Physicians and Surgeons of Manitoba, and the Chief Medical Examiner's Office work togeter to learn from deaths related to prescription drugs, focusing on opioids and other drugs of misuse. All dates, patient initials, names of pharmacies, and prescribers have been changed and de-identified to protect the identity of the patient and their family.

Introduction

MB was a 39-year-old female who was found deceased in her bedroom at home on Apr 26, 2018. Empty pill bottles and open alcohol containers were found on the bedside table. MB's past medical history included depression and anxiety. Other social determinants of health included the recent passing of a parent earlier in the year, an ongoing criminal matter, and recent loss of her job. MB also had teenage dependent children. The immediate cause of death was determined to be mixed drug overdose (topiramate, bupropion, cyclobenzaprine).

A significant condition contributing to death was hepatic cirrhosis.

Discussion

In this case, levels of bupropion, cyclobenzaprine, and topiramate were particularly high, however, these medications were not regularly filled by MB. In addition, clonazepam levels were low, and quetiapine was not detected in the toxicology report, but these medications were regularly filled and were filled post-mortem. It is likely that these medications were being diverted.

Recommendations

While it is not easy to identify and prevent an intentional overdose death based on the dispensing pattern shown in MB's DPIN, it is an important reminder about the need to remind patients about returning unused medications and to avoid sharing or using medications not prescribed to them. As many as one in five adults have reported sharing medications with other people and almost half of all people who received prescription opioids did not receive information about their disposal.[1]

Moreover, of those who did receive information about proper medication disposal, only one-third of people received this information from their pharmacist.[1] Following up with patients and their prescriber about non-adherence to medication may help detect how unused medications are being handled or may help determine whether strategies to improve adherence can be offered. Working collaboratively with prescribers and suggesting urine drug screening to be routine for all patients receiving controlled medications can help improve patient safety and identify potential diversion.

There is limited evidence to recommend for or against routine evaluation of suicide risk, particularly in a community pharmacy setting.[2] Some people are apprehensive to ask about suicide, but previous reports have suggested some patients appreciate the opportunity to talk about suicidal thoughts and may not mention this unless specifically asked.[3] Pharmacists are in an opportune position to connect patients with appropriate resources.

A list of Mental Health Crisis and Non-Crisis Regional Contacts can be found here: https://www.gov.mb.ca health/mh/crisis.html. Information about the Crisis Response Centre is also available here: https://sharedhealthmb.ca/services/mental-health/crisis-response-centre/.

Toxicology Results

The following chart represents the results of the toxicology report.

Drug	Level in blood	Therapeutic Range
Bupropion* Hydroxybupropion	400 ng/mL 6100 ng/mL	50 -100 ng/mL N/A
Cyclobenzaprine*	88 ng/mL	3 - 32 ng/mL
Clonazepam 7-aminoclonazepam (active metabolite)	3.7 ng/mL 22 ng/mL	20 - 70 ng/mL 20 - 140 ng/mL
Topiramate*	140 ug/mL	5 – 20 ug/mL
Ethanol (urine)	82 mg/dL	N/A

* above the therapeutic range

Relevant DPIN History Prior to Patient's Death

Generic Name	Date Dispensed	Strength	Quantity	Days Supply	Prescriber	Pharmacy
Bupropion	Mar 20, 2018 Nov 4, 2017 Nov 15, 2016 Oct 6, 2016 Aug 27, 2016	150 mg 150 mg 300 mg 300 mg 150 mg	60 60 30 30 60	30		
Clonazepam	May 15, 2018 Mar 20, 2018 Feb 27, 2018 Nov 4, 2017 Oct 6, 2017 Jul 12, 2017 May 3, 2017 Mar 24, 2017 Nov 15, 2016 Oct 6, 2016	0.5 mg	90 90 90 90 90 60 60 60 60 60	30	Dr X	XYZ Pharmacy
Quetiapine	May 15, 2018 Mar 20, 2018 Feb 27, 2018 Jan 13, 2018 Dec 21, 2017	25 mg	60 60 120 60 60	30 30 60 30 30		

It is a pharmacist's primary responsibility to ensure patient safety when dispensing a prescription medication. All members are reminded of their professional obligation to ensure that each prescription is reviewed thoroughly, and potential issues addressed, even if it means there may be a difficult patient encounter. Measures must be taken to address issues with appropriateness of drug therapy, drug interactions, therapeutic duplication, and inappropriate or unsafe dosing. Pharmacists do not have the obligation to dispense medications that they believe may cause patient harm. In such cases, the patient must be referred appropriately according to the Referring a Patient Practice Direction.

References

1. Kennedy-Hendricks A, Gielen A, McDonald E, McGinty EE, Shields W, Barry CL. Medication sharing, storage, and disposal practices for opioid medications among US adults. JAMA Intern Med. 2016;176(7):1027–9
2. Pirkis J, Burgess P, Jolley D. Suicide among psychiatric patients: a case-control study. Aust N Z J Psychiatry. 2002;36(1):86.
3. Dazzi T, Gribble R, Wessely S, Fear NT. Does asking about suicide and related behaviours induce suicidal ideation? What is the evidence? Psychol Med. 2014;44(16):3361. Epub 2014 Jul