



Select Medical-Legal Reviews of Unintentional Overdose Deaths

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Introduction

ØUnintentional overdose deaths from prescription opioids jumped 260% from 2001 to 2005; over 8,000 deaths occur per year from prescription opioids [1].

ØThe causes of this increasing trend are multifactorial and difficult to quantify do to inconsistent mortality reporting among states and a lack of data.

ØPhysician prescribing error may be partially responsible for some opioid-related deaths, especially when dealing with the unique pharmacologic properties of methadone.

Objectives

ØTo assess the following risk factor for unintentional overdose death:

1. Type of drug,
2. Interval between dosage change
3. Time of death,
4. Age
5. Sex
6. BMI
7. Location of body discovery

Methods

ØOver the past three years, the lead author reviewed 35 medical records of patients with chronic pain who sued a physician for malpractice. Twenty of those cases involved unintentional overdose deaths. Plaintiff and defense attorneys from across the United States requested the consultations.

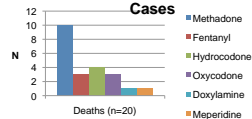
ØThe lead author reviewed the files to assess which drug(s) were primarily responsible for each death and whether the death was due to physician error, patient noncompliance, or some other reason.

ØAll decedents had been taking at least 60 mg morphine equivalent for more than 1 year.

ØCases were not included if they involved a physician prosecution or complaints against a pharmaceutical company.

Results

Figure 1- Lethal Drugs in Malpractice Cases



ØReferring to medical examiner mortality reports, the primary drugs responsible for death were methadone in 50% (n=10) of the cases and hydrocodone in 25% (n=4).

ØMethadone represents less than 5 percent of all total opioid prescriptions dispensed (Figure 2) but a third of opioid-related deaths nationwide (Figure 3).

Figure 2- Total Prescriptions Issued/Dispensed [2]

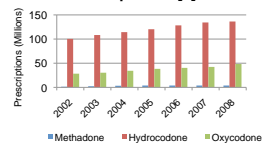


Figure 3-Methadone and Other Opioid Deaths, 1999-2004 [3]

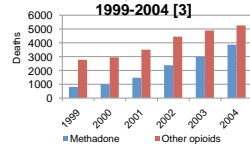
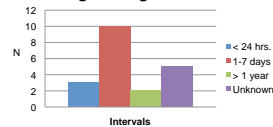
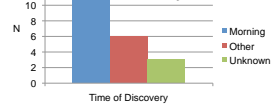


Figure 4- Interval Between Dosage Change and Death



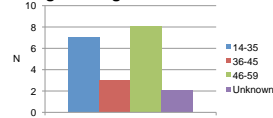
Ø65% (n=13) of overdose deaths occurred within the first week after a change in prescription dosage (Figure 4).

Figure 5- Time of Body Discovery



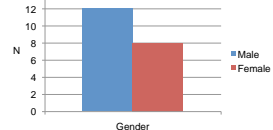
Ø55% (n=11) of deaths were discovered in the morning (Figure 5)

Figure 6- Age of Decedents



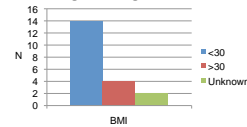
Ø40% (n=8) of decedents were age 46-59 and 35% (n=7) were age 14-35 (Figure 6)

Figure 7- Gender of Decedents



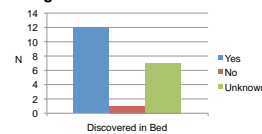
Ø60% (n=12) of decedents were male and 40% (n=8) were female (Figure 7).

Figure 8- Interval Between Dosage Change and Death



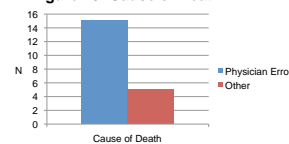
Ø70% (n=14) of the decedents had a BMI less than 30, 20% (n=4) had a BMI greater than 30, and the BMI of 10% (n=2) of the decedents was unknown (Figure 8)

Figure 9- Discovered In Bed



Ø60% (n=12) of the decedents were found in bed, 35% (n=7) were discovered in an unknown location, and 5% (n=1) were discovered elsewhere (Figure 9).

Figure 10- Cause of Death



ØPhysician prescribing error was judged to be the cause of death in 75% (n=15) of the cases. The remaining 25% (n=5) of the deaths were due to various causes, including excessive consumption, patient noncompliance, benzodiazepine and sedative overdose, a defective medication patch, and use of an illicit substance (Figure 10).

Discussion

ØMethadone has unique pharmacological properties that make it difficult for those unfamiliar with the drug to properly prescribe it. Its disproportionate involvement in overdose deaths suggests additional education is required for physicians who prescribe it.

ØMost of the deaths occurring within the first week of consuming a modified dose suggests a knowledge deficit on the part of the prescribing physician that could be corrected with education.

ØThe high proportion of decedents discovered in the morning and in their beds suggests a relationship between sleep and overdose.

Conclusion

ØA select medical-legal review of 20 fatal cases showed that methadone was responsible for most unintentional overdose deaths.

ØThe apparent primary cause of these deaths was physician prescribing error.

ØThese findings cannot be generalized to all unintentional overdose deaths.

References

1. National Drug Intelligence Center, Drug Enforcement Administration, U.S. Department of Justice. National prescription drug threat assessment. Product No. 2009-L0487-001. Johnstown, PA: April 2009. Available at www.usdoj.gov/ndic.
2. IMS Health, National Prescription Audit Plus™ (NPA Plus™)
3. Methadone Diversion, Abuse, and Misuse: Deaths Increasing at Alarming Rate. National Drug Intelligence Center. Nov 16, 2007.