Rate of Nucynta® ER Intentional Abuse Calls to Poison Centers Are Lower Than ER Oxycodone and ER Oxymorphone

Stevan G. Severtson , PhD[1], Suzanne K. Vosburg, PhD[1], Jody L. Green, PhD[1], Richard C. Dart, MD, PhD[1]

[1]Rocky Mountain Poison and Drug Center, Denver Health and Hospital Authority, Denver CO, United States

Introduction

- Tapentadol (Nucynta®) is a Schedule II opioid with a combination of μ-opioid activity and norepinephrine reuptake inhibition. It is used for the management of moderate to severe acute and chronic pain.
- Extended-release (ER) tapentadol (Nucynta ER) was introduced in late 2011 and is formulated to be difficult to crush in an effort to deter abuse via tampering.
- This study compares rates of calls reporting intentional abuse exposure cases between Nucynta ER and other ER Schedule II opioid medications.

Methods

- Data from the Researched, Abuse, Diversion and Addiction-Related Surveillance (RADARS®) System Poison Center Program are used. The RADARS System Poison Center Program obtains data from individuals within the general population and from healthcare providers who are seeking advice regarding potential toxic exposures, including exposures to prescription opioids.
- Cumulative population and dosage units dispensed rates are calculated using data from October 2011 through December 2016. Rates of Nucynta ER reports by intentional abuse exposure cases are compared to ER hydrocodone, ER hydromorphone, ER morphine, ER oxycodone, and ER oxymorphone rates using Poisson regression.
- Unknown active pharmaceutical ingredient formulations were imputed using 100 iterations. Regression coefficients were estimated for each iteration and averaged to give robust estimates.

Results

Population Rates of Calls Reporting Intentional Abuse Cases

- Nucynta ER is significantly lower than ER morphine (p<0.001), ER oxycodone (p<0.001), and ER oxymorphone (p<0.001). Nucynta ER is significantly greater than ER hydrocodone (p<0.001) and ER hydromorphone (p<0.001) (Figure 1).

Dosage Units Dispensed Adjusted Rates of Calls Reporting Intentional Abuse Cases

- Nucynta ER is significantly lower than ER oxycodone (p<0.001) and ER oxymorphone (p<0.001). Nucynta ER is significantly greater than ER hydromorphone (p=0.007). Nucynta ER did not differ significantly from ER morphine and ER hydrocodone (Figure 2).

Figure 1. Ratio of Population Rates Relative to Nucynta ER with 95% Confidence Intervals (CI)

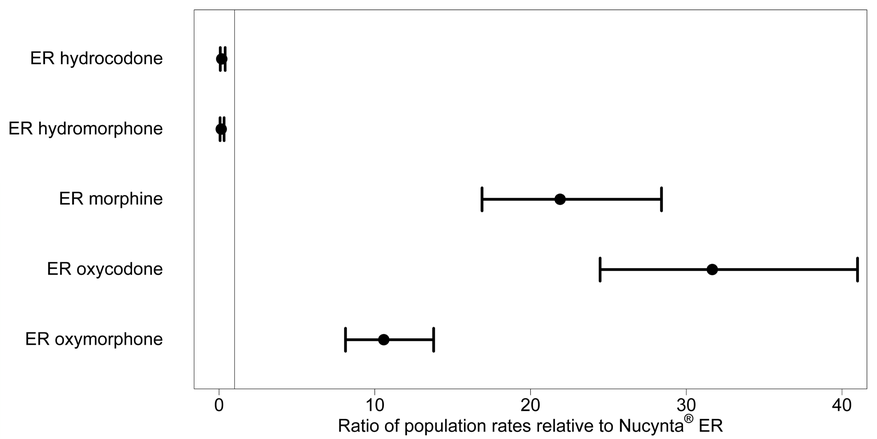
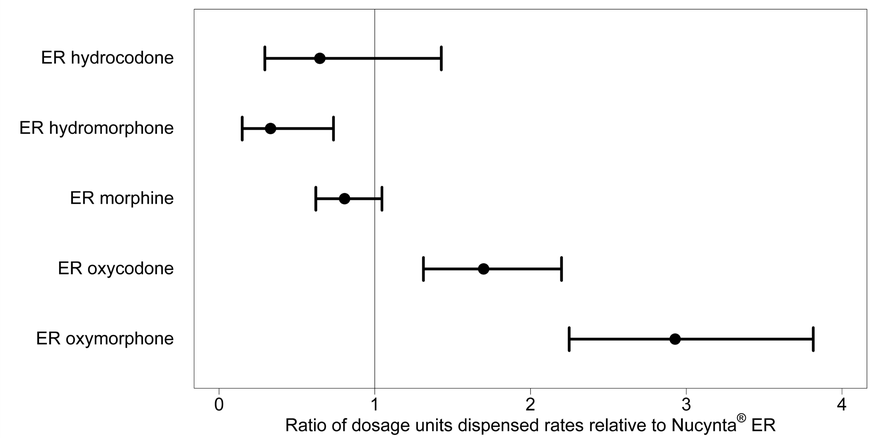


Figure 2. Ratio of Dosage Units Dispensed Rates Relative to Nucynta ER with 95% CI



Note: Values greater than one indicate a rate higher relative to Nucynta ER. Confidence intervals that do not overlap 1 indicate that the Nucynta ER rate is significantly different than the comparator rate. Dosage units dispensed data are based on projections provided by QuintilesIMS™ (Danbury, CT).

Conclusions

- Differences in population rates relative to Nucynta ER are consistent with differences in utilization during the study period
  - The most dispensed ER opioids during the study period (ER oxycodone, ER morphine, ER oxymorphone) had significantly higher population rates than Nucynta ER.
  - The least dispensed ER opioids during the study period (ER hydrocodone and ER hydromorphone) had significantly lower population rates than Nucynta ER.
- The Nucynta ER dosage units dispensed rate was significantly less than two ER opioids with greater utilization during the study period, specifically, ER oxycodone and ER oxymorphone.
- The Nucynta ER dosage units dispensed rate was significantly greater than ER hydromorphone, an opioid with lower utilization during the study period.

Limitations

- The Poison Center Program relies on spontaneous reports; therefore, the number of abuse cases is underreported and the likelihood of a call may be differential across opioids.
- Distinguishing between immediate-release and ER tapentadol may be more problematic than other opioids due to nomenclature.
- This analyses provides information on intentional abuse calls reported to poison centers. Other sources of surveillance (e.g. abuse among individuals entering treatment for opioid use disorders, diversion of prescription opioids) are needed to more fully understand abuse patterns of Nucynta ER and other ER opioids.

Disclosures

The RADARS System is supported by subscriptions from pharmaceutical manufacturers for surveillance, research and reporting services. RADARS System is the property of Denver Health and Hospital Authority, a political subdivision of the State of Colorado. Denver Health retains exclusive ownership of all data, databases and systems. Subscribers do not participate in data collection or analysis, nor do they have access to the raw data.

RMPDC ROCKY MOUNTAIN POISON & DRUG CENTER *Saving Lives with Answers for 50 Years*

RADARS® SYSTEM

DENVER HEALTH Level One Care for ALL