

Clinical Question

Will educating CRNAs and RRNAs about the opioid sparing effects of Dexmedetomidine with distribution of a dosing guide increase use of Dexmedetomidine perioperatively?

INTRODUCTION

- Dexmedetomidine may be useful in replacing or reducing opioids during induction and maintenance of anesthesia and decreasing postoperative opioid consumption.
- Dexmedetomidine is a short acting alpha 2 adrenergic agonist
- Blunts the sympathetic response**
- Decreases MAC requirements of volatile anesthetics**
- Decreases opioid requirements**
- Aim: Increase the use of Dexmedetomidine for its opioid sparing properties by educating providers

BACKGROUND

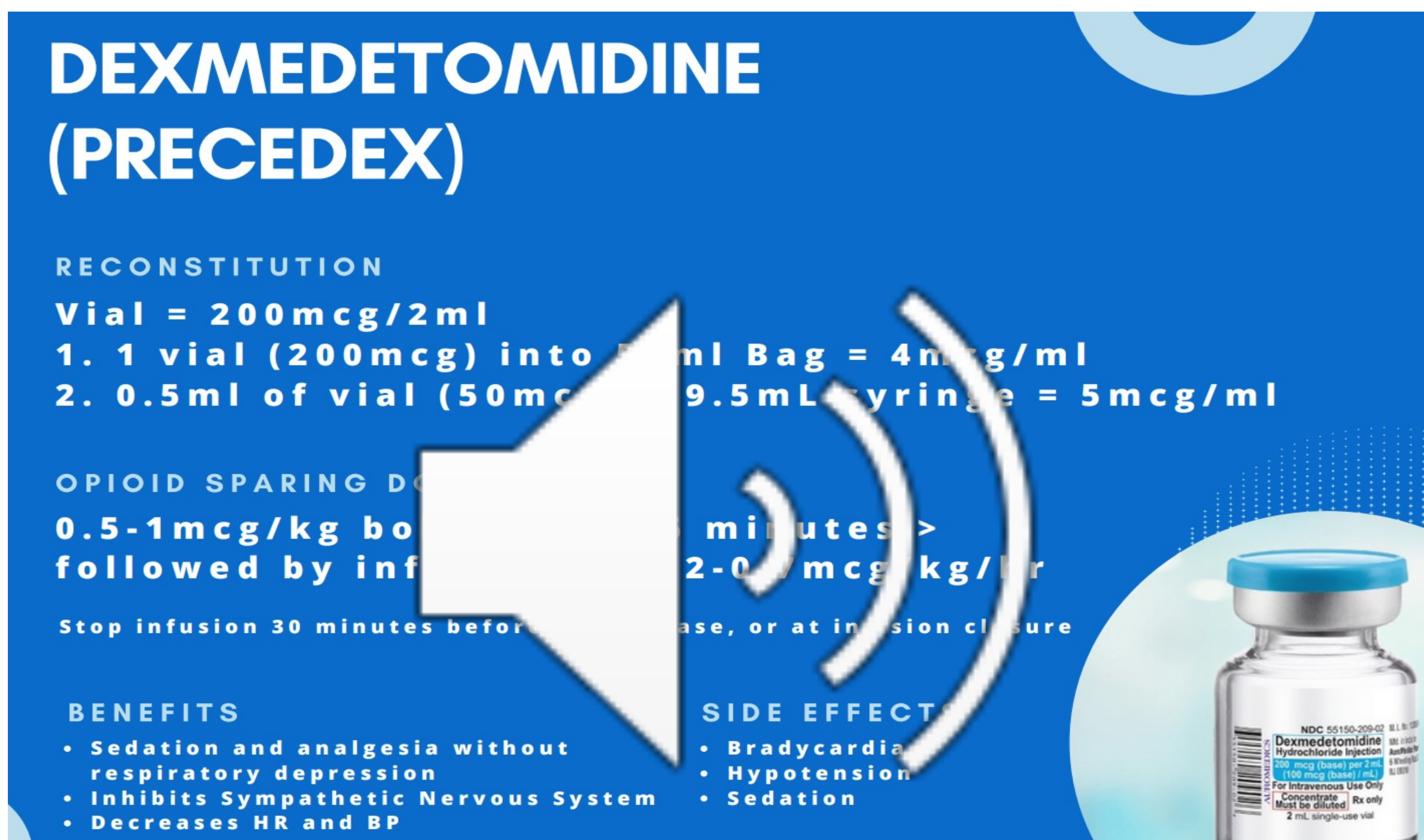
- 70% of the drug overdose deaths in 2018 involved an opioid
- Opioids cause hyperalgesia, respiratory depression, nausea & vomiting, histamine release, ileus, prolonged sedation
- Which leads to increased length of stay, increased costs, decreased patient satisfaction

Dexmedetomidine in Anesthesia

- produces sedation and dose-dependent analgesia without depressing respiratory drive or spontaneous ventilation
- Alpha-2 receptors stimulated by Dexmedetomidine in the CNS and spinal cord produce sedation and analgesia

LITERATURE REVIEW

- Dexmedetomidine on induction offered a significant decrease in heart rate and attenuation of increases in blood pressure during tracheal intubation than Fentanyl.
- Patients receiving Dexmedetomidine Intraoperatively had lower heart rates without a decrease in blood pressure
- In PACU, patients reported **Lower levels of pain** at rest 1-48hrs post-op, and **Required Less Morphine** postoperatively
- In Neuro Surgery, patients experienced **less Post-op nausea and vomiting, shivering, tachycardia and lower MAPs in PACU**



DEXMEDETOMIDINE (PRECEDEX)

RECONSTITUTION

Vial = 200mcg/2ml

1. 1 vial (200mcg) into 50ml Bag = 4mcg/ml

2. 0.5ml of vial (50mcg) into 9.5ml Syringe = 5mcg/ml

OPIOID SPARING DOSE

0.5-1mcg/kg bolus followed by infusion 2-0.5mcg/kg/hr

Stop infusion 30 minutes before emergence, or at incision closure

BENEFITS

- Sedation and analgesia without respiratory depression
- Inhibits Sympathetic Nervous System
- Decreases HR and BP

SIDE EFFECTS

- Bradycardia
- Hypotension
- Sedation

METHODOLOGY

Design: Prospective, Descriptive Design

Setting: The Gap Analysis survey was employed through the internet, and the point of care Dexmedetomidine Workshop and dosage badge buddy were presented virtually at the professional state organization of nurse anesthetists Fall meeting on November 7, 2021.

Study Population: The professional state organization of nurse anesthetists' members, including RRNAs and CRNAs. We anticipated a sample size of 75-125 participants. Participation was voluntary.

Outcome Measures: The Gap Analysis survey gathered data regarding Dexmedetomidine knowledge, comfortability of use, frequency of use, barriers to Dexmedetomidine use in practice, and years of experience as a clinical provider.

After the Dexmedetomidine workshop participants had access to the Dexmedetomidine dosage badge buddy on the professional state organization of nurse anesthetist's website. Website analytics of access and downloads of the badge buddy were retrieved and used to determine if the point of care Dexmedetomidine Workshop and dosage badge buddy were useful resources in the clinical setting.

Gap Analysis Survey Results

- 100 respondents, 46% RRNAs/ 54% CRNAs
- 90% practiced in the hospital setting
- 21% students in training, 43% <5 years of experience and 35% >5 years of experience

Barriers to use

- 30.25% - lacked comfortability/confidence to use the drug, 21.01% - lack of knowledge, & 12.61% use not recommended by peers
- 86% "agreed" or "strongly agreed" that a Dexmedetomidine workshop and badge buddy would be helpful in increasing their knowledge and comfortability with the drug.**

Dosage Badge Buddy Implementation

- 31 downloads of the dosage badge buddy**
- 18 downloads of the entire PowerPoint**

DISCUSSION

- A point of care workshop to increase the use of Dexmedetomidine was supported by the Gap Analysis Survey results

LIMITATIONS

Covid-19

- Restrictions planning events/conferences
- User burnout to virtual meetings, online surveys and email

State nurse anesthesia association

- Facilitator: Instrumental in promoting Gap Analysis Survey, implementation at the Fall meeting and putting our dosage badge buddy online
- Dosage badge buddy published to website 3 weeks post-implementation

Website analytics

- Screen shotting badge buddy and sending pictures to other providers. (unable to track)
- number of downloads only gave baseline data regarding interest, not actual use
- Future studies could do post-intervention survey to assess:

References

