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DEXMEDETOMIDINE TREATMENT FOR THE SEDATION OF PRETERM NEONATES

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BACKGROUND AND IMPORTANCE

The control of pain and sedation is a challenge in the neonatal units. Traditionally opioids and benzodiazepines have been the most commonly used combination, but these drugs are not without side effects. **Dexmedetomidine** (DXM), an **α-adrenergic agonist** with a **sedative and analgesic effect**, could be an alternative because it offers advantages such as the **absence of gastrointestinal effects and depression on the respiratory center**. Its administration in the newborn (NB) is off-label, although there are publications about its safety and efficacy.

AIM AND OBJECTIVES

To analyse **effectiveness** and **safety** of DXM in NB.

MATERIAL AND METHODS

Type of study: Retrospective observational
Time of study: From July 2017 to September 2018 (14 months)
Inclusion criteria: neonates admitted in a third level Neonatal Intensive Care Unit (NICU) and treated with dexmedetomidine in perfusion during ≥ 24 hours

Data collection: Electronic Health Records (OrionClinic® and ICCA®)
Collected variables: median gestational age, initial and maximum dose, treatment duration, concomitant sedoanalgesics, heart rate (HR), systolic blood pressure (SBP) and dyastolic blood pressure (DBP) before and after beginning of DXM
Statistical analysis: percentages, interquartile range, t-Student test

RESULTS

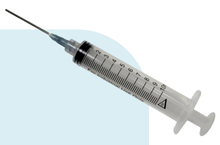
- n=**31 patients**
- Median gestational age: **25 weeks** (IQR 25-27)
- <32 weeks: **74%**

Most common **concomitant sedoanalgesic medication**: **fentanyl** (29 patients, 93.5%)

- **Treatment duration**: **178h** (IQR 96-255)
- **11 patients** extubated during the infusion and **neither needed reintubation** in the following 72h.
- **Fentanyl dose** could be **reduced** in the first 24h from the start of DXM in 16 patients (55%)

Initial dose: 0.3 mg/kg/h (IQR 0.2-0.4)
Maximum dose: 0.8 mg/kg/h (IQR 0.7-1)

Initial **loading bolus** was administered to 4 patients, 2 of them presented **bradycardia** that required **atropine** treatment



mean (SD)	12h pre-DXM	24h post-DXM	t-Student
HR (bpm)	166 (17)	152 (14)	**p<0,01**
SBP (mmHg)	63 (12)	60 (10)	p=0,09
DBP (mmHg)	37 (10)	33(8)	**p=0,03**

Table 1. Comparison between heart rate (HR), systolic blood pressure (SBP) and diastolic (DBP) before and after the beginning of DXM

CONCLUSIONS AND RELEVANCE

Dexmedetomidine is an innovative option to manage sedation. Our experience shows that its administration in perfusion was **safe** (reduction of HR and DBP statistically significant, but without clinical impact). However, we need to be cautious with bolus administration. Besides, **extubation was possible** during its administration **without impact in the respiratory activity level** and without needing its immediate removal, **improving withdrawal syndrome** control. It has favored a better sedoanalgesia with the possibility of **lowering the dose of concomitant drugs**.

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