**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-adrernergic 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

**RESULTS**

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

- **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%)

- **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

<table>
<thead>
<tr>
<th></th>
<th>12h pre-DXM</th>
<th>24h post-DXM</th>
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<tbody>
<tr>
<td>HR (bpm)</td>
<td>166 (17)</td>
<td>152 (14)</td>
<td>p&lt;0,01</td>
</tr>
<tr>
<td>SBP (mmHg)</td>
<td>63 (12)</td>
<td>60 (10)</td>
<td>p=0,09</td>
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<tr>
<td>DBP (mmHg)</td>
<td>37 (10)</td>
<td>33(8)</td>
<td>p=0,03</td>
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**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.