**WAT’s a Nurse to Do?**

**Understanding Pain and Withdrawal in Preverbal Patients**

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**Background**

- CV Acute is a 21-bed step-down telemetry floor serving many preverbal patients.
- These patients transfer from CTICU after being intubated and sedated for days after surgery. They are commonly in the first few days of a wean from opioids and benzodiazepines.
- Assessing pain and withdrawal in preverbal patients is very difficult, and unfortunately often goes undertreated.
- Poor treatment of pain in these young patients affects short-term and long-term outcomes, including healing, risk for hemorrhage, immune function, cardiac stress, chronic pain, developmental outcomes, morbidity and mortality.
- Studies show that after the fifth day of continuous narcotic administration, the probability of experiencing withdrawal symptoms increases 50-100%.

**Literature Review**

- The Withdrawal Assessment Tool (WAT-1) has established validity in pediatric patients (Franck, Scoppettuolo, Wypij, & Curley, 2012).
- Total opioid dose and number of days received affect probability of withdrawal symptoms (Ista, van Dijk, Gamel, Tiboel, & de Hoog, 2008).
- Signs and symptoms seen in patients experiencing withdrawal from opioids and benzodiazepines have been described and should be interpreted as part of a complete clinical picture. (Ista, van Dijk, Gamel, Tiboel, & de Hoog, 2008).
- Long-term consequences of mismanaged pain include neuropathic changes in central nervous system and long-term developmental consequences (Paige, 2004).

**Methods**

- Key informant interviews with CV Acute managers, Lara Nelson, MD (CTICU), and Meghan Middleton, NP (Magik Pain Team).
- Pre and post surveys of CV Acute RNs.
- Developed and implemented an education presentation on pain and withdrawal for CV Acute RNs.

**Teaching Implemented**

**Step 1**

Know patient’s opioid and benzodiazepine history.

When receiving transfer report, ask...

- What opioids and benzodiazepines were patients on for sedation and analgesia in CTICU?
- How many vs. how fast was patient intubated or sedated?
- What was patient’s last WAT score?

When receiving change of shift report, ask...

- When were opioids and benzodiazepine doses weaned?
- Which drugs were weaned and how?

**Step 2**

Assess the patient’s symptoms.

- Exact symptoms
- Opioid withdrawal
- Benzodiazepine withdrawal

- History of previous opioid and benzodiazepine use
- Previous withdrawal symptoms
- Does drug dose affect withdrawal symptoms
- Patient’s pain level
- Appropriate sedation
- Patient's mental status

**Step 3**

What is the half-life of the medication(s) from which they are weaned?

- Indications when patient may begin showing signs of withdrawal.
- Allows RN to make a more accurate decision regarding which medication patient may be withdrawing from.

**Step 4**

Provide PRN dose if needed.

- Providing a PRN dose will not delay weaning process
- PRN dose will usually be higher than schedule doses
- Assess and chart the WAT score 1-2 hours after the PRN dose was given.

**Unit Survey Results**

**Tools Provided**

This chart was given as a badge card to all nurses

<table>
<thead>
<tr>
<th>DRUG</th>
<th>Peak Effect</th>
<th>Duration of Effect</th>
<th>Half-Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorazepam (Ativan)</td>
<td>NONE</td>
<td>4-5 hours</td>
<td>Neonates: 24-50 hours; Children: 4-12 hours; Adults: 10-20 hours</td>
</tr>
<tr>
<td>Hydromorphone (Dilaudid)</td>
<td>30-90 minutes</td>
<td>4-5 hours</td>
<td>1.5-4 hours</td>
</tr>
<tr>
<td>Morphine Sulfate Oral</td>
<td>4-6 hours</td>
<td>Infants: 6 hours; Children: 12 hours; Adults: 24 hours</td>
<td></td>
</tr>
<tr>
<td>Methadone</td>
<td>NONE</td>
<td>6-8 hours</td>
<td>15-29 hours</td>
</tr>
</tbody>
</table>

**Conclusions**

- After education, nurses felt more comfortable in assessing pain and withdrawal in pre-verbal patients.
- It is very important to adequately manage pain and withdrawal to prevent both short-term and long-term consequences.
- Both pharmacological and non-pharmacological management is essential to consider.
- When determining what PRN dose to administer it is important to consider the patients opioid and benzodiazepine history, assess the patients' symptoms, and know the half-life of the medications from which the patient is being weaned.
- Ongoing education for nurses should continue.

**References**

