Assessment and Intervention of Opioid Induced Respiratory Depression Using the “POSS”

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Conflict of Interest Disclosure

• Conflicts of Interest for author is: NONE

A conflict of interest is a particular financial or non-financial circumstance that might compromise, or appear to compromise, professional judgment. Anything that fits this should be included. Examples are owning stock in a company whose product is being evaluated, being a consultant or employee of a company whose product is being evaluated, etc.


Objectives

The participant will be able to:

• describe and explain the POSS
• describe and explain two ways the POSS can improve patient safety
• explain how to incorporate the POSS in routine practice
• list three benefits of the POSS
The New Hanover Regional Medical Center Journey

Purposes of the Journey

• Insure Safety of all patients

• NHRMC has zero tolerance for Opioid Induced Respiratory Depression (OIRD)

• Satisfy JC requirements

• Adopt a user friendly tool to improve assessment of and intervention for patients at risk of OIRD

• Educate nurses how to use and document this assessment tool

The Beginning

• Commit to patient safety as priority

• Literature review

• Identified Pasero Opioid Sedation Scale as tool for:
  – Assessment
  – documentation

• Presented to Clinical Claims Committee
Like all medications Opioids have side effects.

Common Opioid Side Effects

- Nausea and vomiting
- Pruritus
- Constipation
- Sedation
- Respiratory Distress/Depression
Respiratory Depression

- Characterized by:
  - Less than 8 to 12 breaths per minute
  - Reduced oxygen saturation
  - Altered arterial CO2 tension
  - Cyanosis
  - Periodic apnea
  - Drowsiness, sedation

- Danger is progression to Respiratory Arrest

Respiratory Depression

- A “vicious cycle”

- Opioid Induced Respiratory Distress occurs due to:
  - a lowered carbon dioxide (CO2) drive
  - Blunting of chemoreceptor response to oxygen & CO2
  - Prolonged exhalation
  - Suppression of depth of respirations
  - Impaired gas exchange

Clinical Challenges

- Early identification of patients at risk for developing respiratory compromise
- Appropriate assessment for sedation
- Identify sedation that is advancing
- Early intervention to prevent respiratory arrest
- Reasonable documentation
Increased Risk for OIRD

- First 24 post operative hours
- Untreated Obstructive Sleep Apnea (OSA)
- Respiratory compromise
- Morbid Obesity
- Certain genotypes
- Elderly
- Opioid Naïve
- Opioid Tolerant with changes in dose or opioid
- Concomitant sedating medications

Early Identification of Respiratory Compromise

- Advancing sedation is the *earliest* sign of respiratory compromise!
- Identify factors that increase risk of OIRD
- Assess Respiratory Function
  - Rate for one full minute
  - Character and quality

Limitations of Technology

- Reliability and sensitivity issues of the equipment
- Patient compliance with equipment
- Expense
- Hypoxemia measured by pulse oximetry is a late finding
Nurse Assessment is the Best Intervention to Prevent OIRD

Challenges
- How to describe the level of sedation that is assessed so that others understand what was assessed?
- How to document the level of sedation that was assessed so that others understand what was assessed?
- What should be done with the information assessed?

Literature Review Search
- RASS
- Ramsay Sedation Scale
- POSS
Pasero Opioid-Induced Sedation Scale (POSS)

<table>
<thead>
<tr>
<th>Level</th>
<th>State Description</th>
<th>Dosing Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Sleepy, easy to arouse</td>
<td>Acceptable; no action necessary; may increase opioid dose if needed.</td>
</tr>
<tr>
<td>1</td>
<td>Awake and alert</td>
<td>Acceptable; no action necessary; may increase opioid dose if needed.</td>
</tr>
<tr>
<td>2</td>
<td>Slightly drowsy, easily aroused</td>
<td>Acceptable; no action necessary; may increase opioid dose if needed.</td>
</tr>
<tr>
<td>3</td>
<td>Frequently drowsy</td>
<td>Unacceptable; decrease opioid dose 25%-50% or notify primary MD or anesthesiologist for orders; administer a non-sedating, opioid-sparing nonopioid such as acetaminophen or a NSAID; monitoring respiratory status &amp; sedation until level is less than 3 &amp; respiratory status is satisfactory.</td>
</tr>
<tr>
<td>4</td>
<td>Somnolent; minimal or no response to physical stimuli</td>
<td>Unacceptable; stop opioid; consider administering naloxone; notify primary MD or anesthesiologist; monitor respiratory status and sedation level closely until sedation level is less than 3 and respiratory status is satisfactory.</td>
</tr>
</tbody>
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Benefits of POSS

- Specific to opioid-induced sedation
- High reliability (Chronbach’s alpha >.90)
- Clear and simple to use
- No extra time required to assess
- Provides an agreed upon number for ease of documentation
- Provides established guidance for nursing intervention
- Satisfies JC mock survey recommendation

When to Use the POSS

- With every assessment and re-assessment for pain, assess sedation in the person who received opioid analgesia
- Utilize the “Dosing Guidelines” prior to administering additional opioids
- Document in HED, the sedation level using the appropriate letter (S) or number (1, 2, 3, or 4)

Benefits for Patient Safety

- Guidance for safe administration of opioids
- Criteria for using range orders
- Tool to increase patient safety after opioid administration
More Benefits of Using POSS

- Component of Patient Education
- Tool to improve consistency of documentation
- Tool to document patient status

Introducing The POSS

Incorporating the POSS in Routine Practice

- Education
- Incorporate into EMR
- Audit use
- Incorporate into EPIC
Educating About The POSS
- Staff meetings and huddles
- Computer Based Learning Module
- Handouts
- New Nurse Orientation
- Staff meetings and huddles

Monitoring Use of the POSS
- Weekly Audits
- Soliciting feedback

TJC Sentinel Alert on Opioids
- “… most serious (adverse) effect being respiratory depression, which is generally preceded by sedation.”
- “the potential for opioid-induced respiratory depression should always be considered”
- 29% of opioid AE were related to improper monitoring
Change to EPIC

Auditing Documentation in EPIC
Improving Documentation

Adjusting in Epic

Improving in Epic
The Best of Epic

Benefits of Using The POSS
- Encourage routine assessment of sedation
- Easy documentation of sedation
- One criteria for Range Orders
- Improve patient safety
- Satisfy TJC requirements
- Facilitates communication

Remember:

Sedation **always** occurs before respiratory depression!

If a person is sedated as a result of an opioid, assess respiratory status and intervene according to the POSS guide.
References


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