Improving Postoperative Care of Minimally Invasive Gynecologic and Urologic Ambulatory Extended Recovery Patients: Non-pharmacological Pain Management

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Background

- Multiple etiologies of pain after laparoscopy – first 24-48 hrs can be more severe than open surgery
- Insufflation of CO2 into the abdomen can cause cramping, bloating, and shoulder tip pain
- Repeated opioid dosing can lead to sedation, respiratory depression, ileus, constipation, opioid-induced hyperalgesia, and nausea or vomiting
- No alternative, complementary, or non-pharmacological interventions for pain were formally included in AXR pathways
- Pain management varied unit to unit and nurse to nurse
- Patients prefer to avoid medications if possible

Aims

1. Increase the mean number of documented non-pharmacological interventions
2. Decrease mean pain scores at the time of first follow up assessment and discharge
3. Decrease mean opioid use from four hours postoperatively until discharge
4. Decrease the prevalence of individuals being converted from AXR to inpatient because of pain control issues

Methods

**DESIGN:** Quality Improvement project with a pre-/post-design

**SETTING:** 3 designated AXR units at comprehensive cancer center

**SAMPLE:** All post-operative minimally invasive gynecologic or urogynecologic surgery patients on AXR unit who were discharged per pathway after 1 night or became inpatient because of pain, over two 12-week periods (pre- and post-implementation)

**Intervention**

- **Non-Pharmacological Pain Management**
  - Demonstrate use of eCARE Videos
  - Acupuncture for Pain and Headaches
  - Touch Therapy for Caregivers (Massage)
  - Guided Imagery Meditation
  - Mindful Eating Meditation & Managing Pain with Meditation

- Decrease lightening and noise
- Encourage taking music via headphones
- Exercise as tolerated 1-2 hr day and night
- While in bed, bend and straighten legs or roll knees side to side with leg bent
- Begin ambulation by 4 hr postoperatively, as long as clinically stable
- Drink more or ginger tea from Food and Nutrition for gas pain when tolerating P5

- Apply heat pads to abdomen and/or shoulders as needed. Do not apply directly on skin.

- Implement 5/17/2017 Routine

**Key Demographics**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Pre-impleration (N = 96)</th>
<th>Post-impleration (N = 86)</th>
<th>Statistically Significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (SD)</td>
<td>58.7 (5.5)</td>
<td>59.9 (19.2)</td>
<td>Yes</td>
</tr>
<tr>
<td>Sex, n (%)</td>
<td>Male</td>
<td>33 (34.4)</td>
<td>63 (69.6)</td>
</tr>
<tr>
<td>Surgery Duration (minutes, mean (SD))</td>
<td>169.5 (74.9)</td>
<td>169.2 (76.5)</td>
<td></td>
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<tr>
<td>Length of Stay (minutes), mean (SD)</td>
<td>1283.6 (272.4)</td>
<td>1285.9 (295.8)</td>
<td></td>
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</tbody>
</table>

**Results**

- **Outcomes**
  - Decreased non-pharmac interventions, median (IQR) 0 (2) vs 3 (6)  Yes

- **Interventions**
  - Implemented non-pharmac interventions, median (IQR) 4 (8) vs 0 (6)  Yes

**Limitations**

- Multiple non-pharmacological interventions in bundle - unclear which interventions provided pain relief and to what degree
- Documentation of non-pharmac interventions not done in real-time
- 71.1% of all patients were missing initial follow up assessment notes, and 6.6% were missing both – affecting data on documented non-pharmac interventions and pain scores

**Conclusions**

- Significant decrease in post-operative opioid use
- Significant decrease in inpatient admissions
- Significant increase in documented use of non-pharmac interventions
- Non-pharmacological interventions can decrease the need for opioids after surgery in GYN and URO surgery

**Future Directions**

- Further research on the individual strategies listed in this bundle, in addition to gum chewing and abdominal binders, which are other feasible interventions in the short stay surgery population
- Bundle is likely transferable to all abdominal laparoscopic surgery patients. Has already been added to order sets at ambulatory surgery center for GYN and URO population
- Other bundles should be created for other types of surgeries as well as for non-surgical patients