Enhanced Recovery with Control of Nausea after Laparoscopic Sleeve Gastrectomy

Laurie A. Deaton MSN, RN, CNOR, CBN; Randy Absher PharmD.; Lauren Evans BSN, RN; Eric M. Wilson MD, FACS; Dawn Williams-James BSN, RN-BC
Wesley Long Hospital
Bariatrics and Wellness

METHODS

After a second literature review, the team moved forward seeking IRB approval for the addition of a NK₁ receptor antagonist to the existing bundle. In a non-blinded, non-randomized study, the team examined three sequential cohorts:

<table>
<thead>
<tr>
<th>Cohort</th>
<th>PONV Prophylaxis</th>
<th>n</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>Usual care +40 mg NK₁ Receptor antagonist.</td>
<td>48</td>
<td>8/15/17-11/20/17</td>
</tr>
<tr>
<td>Group 2</td>
<td>Usual care + 80 mg NK₁ Receptor antagonist.</td>
<td>48</td>
<td>11/20/17-1/23/18</td>
</tr>
</tbody>
</table>

Inclusion Criteria:
- Age 18 or older, undergoing LSG.

Exclusion Criteria:
- History of allergy or intolerance to NK₁ Receptor antagonist.
- Concomitant use of pimozone.

RESULTS/OUTCOMES

A significant reduction in incidence of post-operative nausea and emesis occurred during both cohorts, with no episodes of emesis in the second cohort.

![Number Patients Requiring Rescue Anti-Emetic vs Total Rescue Anti-Emetic doses](image)

As expected, with a reduction in post-operative nausea and vomiting the team noted a simultaneous reduction in patients requiring rescue anti-emetic doses. The reduction in anti-emetic doses continued into the second cohort with 91 total doses, a reduction of 177 total doses from the control group.

DISCUSSION

The sequential cohorts make generalizations difficult considering the possibility of other practice changes confounding results. The enhanced recovery bundle including the addition of the NK₁ Receptor antagonist proved to be highly effective in controlling nausea in the post-operative period leading to decreased rescue anti-emetic use, improved patient progression, and a vast reduction in LOS. Based on these significant findings the enhanced recovery bundle including NK₁ 40mg will be continued at the site.

NURSING IMPLICATIONS

- Patient Safety improvement due to the reduction in PONV, reducing risk of Healthcare Associated Infection secondary to reduced LOS.
- Improved Patient Experience related to earlier discharge.
- Improved team engagement related to multi-disciplinary team collaboration to improve outcomes.
- Increased Hospital Margin related to decreased LOS and Readmission rates increasing third party payer and Medicare reimbursement.

REFERENCES


CONTACT INFO

Bariatric.surgery@conehealth.com

ACKNOWLEDGEMENTS

Special thanks to the following individuals without whom this undertaking would not have been possible:
- Bariatric Surgeons from Central Carolina Surgery
- Cone Health: Wesley Long S West
- Peggy Wynn, Medical Librarian
- Cone Health: Bariatric CPI team

PROBLEM

Metabolic and Bariatric Surgery (MBS) patients frequently experience post-operative nausea and vomiting (PONV) leading to increased Length of Stay (LOS) and readmissions. The center’s MBS Clinical Reviewer, MBS Coordinator and MBS Director reviewed data and determined that the center’s LOS had increased from 2.3 to 2.7 days from April 2015 to March 2016 for Laparoscopic Sleeve Gastrectomy (LSG). During this time, 62% of patients had an extended LOS due to nausea, vomiting or poor oral intake while 66.7% of readmissions occurred for nausea, vomiting and fluid electrolyte imbalance. Conversely, Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) non-risk adjusted rates for LOS decreased from 2.1 to 1.7 days and 35.8% of readmissions were for nausea, vomiting or fluid electrolyte imbalance for LSG.

A review of the current literature combined with anecdotal evidence collected at the bedside led the team to create a focused peri-operative bundle designed to reduce PONV. The team set out to determine if the introduction of an enhanced recovery plan aimed at reducing nausea and vomiting in the immediate post-operative period could reduce LOS and the occurrence of 30-day readmissions for laparoscopic sleeve gastrectomy?

OBJECTIVES

- Create an enhanced recovery care plan aimed at reducing PONV and subsequent delays in progression following LSG.
- Decrease LOS following LSG to at or below the 2016 MBSAQIP national non-risk adjusted rate of 1.7 days.
- Decrease 30-day Readmission Rates following LSG.
- Decrease the frequency of nausea and vomiting in the post-operative period.
- Reduce rescue anti-emetic doses in the immediate post-operative period.

METHODS

The focused bundle included the following interventions:
- PONV Prophylaxis.
- Multimodal Analgesia.
- Selective rather than routine Upper GI.
- Proton Pump Inhibitor.
- Removal of fluid volume restrictions post-operatively.

The initial results of the focused bundle were not as significant as expected which led the team to regroup to determine if an additional intervention was appropriate.