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| **Requester** | Surgery CCG |
| **Presenter**  | Dr.Cascano |
| **Title of Request** | **Recommendations for use of Mechanical Bowel Preparation with preoperative oral antibiotics in elective colorectal resections.**  |
| **CM Team to Present to:** | **Surgery CCG** |
| **Goal of presentation** | [x]  Decision Needed [x]  Seeking Feedback [ ]  Informational Only |
| Situation*Please describe what is happening at the present time.* | Bowel preparation has been used in colorectal surgery for a variety of reasons. In the current practice, providers can use oral antibiotic prep, mechanical bowel prep (MBP), or both. Recent review of literature and recommendations from the American Society of Colon and Rectal Surgeons have demonstrated that there is no benefit from MBP alone or no benefit with preoperative oral antibiotics alone, without mechanical preparation, for patients undergoing elective colorectal surgery. Therefore, a colorectal surgeon workgroup was assembled to evaluate current literature on this topic and formalize a Banner standardized recommendation for MBP and oral antibiotics.  |
| Background*Please describe the circumstances leading up to this situation.* | In 2019, the Surgical Site Infection (SSI) prevention bundle was rolled out as a Surgery CCG Clinical Practice and a multi-year long term annual initiative aimed at improving surgical site infections throughout Banner Health. It remained an annual initiative until 2022 and continues to be monitored & reported as part of the Surgery CCG. Within this bundle, a colorectal surgery specific bundle, addresses the regimen for mechanical and/or oral bowel preps for elective patients prior to their colorectal procedure. Currently, Oral Bowel Preps using neomycin + metronidazole **and/or** mechanical bowel prep per attending preference is part of the pre-operative bundle, but both are not required. The decision to recommend **both** MBP and oral antibiotics was previously met with much controversy in the literature. Current literature and recommendations have changed since then.   |
| Assessment*What do you think the problem is?* | Recent literature review from the National Surgical Quality Improvement Program (NSQIP), evaluated 8415 patients who underwent elective colectomy from 2011-2012, comparing those with no bowel prep (26%), MBP alone (45%) and oral antibiotics (9%). The oral antibiotic bowel preparation group had a statistically significantly lower rate of postoperative SSI (6.5% vs 14.9% with no prep or 12% with MBP alone). A similar study using Veterans affairs Surgical Quality Improvement data found that patients who received oral antibiotics significantly decreased the SSI rate in comparison with no bowel preparation (9% vs, 18%). MPB alone without oral antibiotics resulted in a similar SSI rate to that seen with no bowel prep (20% vs. 18%). In summary, MBP, in combination with preoperative oral antibiotics, is recommended for elective colorectal resections. (Strength of evidence - 1B) MBP in combination with oral antibiotics, reduces the rates of SSI, anastomotic leaks, readmission, and length of stay in comparison with other methods of bowel prep. Contraindications for MBP+ oral antibiotics are for patients with allergies to antibiotics or those who have bowel obstruction.  |
| Recommendation*What should be done to correct the problem?* | Current evidence points to an advantage of utilizing mechanical bowel preps in combination with oral antibiotics. Recommendation proposed is the following regimen:Oral and mechanical bowel prep must be performed for the elective colorectal surgical patient:**Oral antibiotic preparation (Nicholas and Condon prep) with**:Neomycin 1 gm PO AND Metronidazole 1gm PO*Give both at 2 pm, 3pm, and 10 pm the night before surgery***OR**Neomycin 1 gm PO AND Erythromycin 1gm PO*Give both at 2 pm, 3pm, and 10 pm the night before surgery***AND****Mechanical bowel prep per surgeon preference** *(ex. Fleet, GoLytely, Nulytely, Miralax, Moviprep etc)* |
| **References:** | 1. Castagneto-Gissey, L.; Russo, M.F.; Casella-Mariolo, J.; Serao, A.; Marcellinaro, R.; D’Andrea, V.; Carlini, M.; Casella, G. **The Role of Antibiotic Prophylaxis in Anastomotic Leak Prevention during Elective Colorectal Surgery: Systematic Review and Meta-Analysis of Randomized Controlled Trials**. Antibiotics 2023, 12, 397.
2. Migaly J, Bafford AC, Francone TD, Gaertner WB, Eskicioglu C, Bordeianou L, Feingold DL, Steele SR; **Clinical Practice Guidelines Committee of the American Society of Colon and Rectal Surgeons. The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Use of Bowel Preparation in Elective Colon and Rectal Surgery.** Dis Colon Rectum. 2019 Jan;62(1):3-8. Doi: 10.1097/DCR.0000000000001238. Erratum in: Dis Colon Rectum. 2019
3. Khangura SD, la Fleur P, Argáez C, et al. **Bowel Preparation for Elective Colorectal Procedures: A Review of Clinical Effectiveness, Cost-Effectiveness, and Guidelines.** Ottawa (ON): Canadian Agency for Drugs and Technologies in Health; 2018 Jul 13.
4. McSorley ST, Steele CW, McMahon AJ. **Meta-analysis of oral antibiotics, in combination with preoperative intravenous antibiotics and mechanical bowel preparation the day before surgery, compared with intravenous antibiotics and mechanical bowel preparation alone to reduce surgical-site infections in elective colorectal surgery**. BJS Open. 2018 May 10;2(4):185-194
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