Optimizing Adequacy of Bowel Cleansing for Colonoscopy: Recommendations From the US Multi-Society Task Force on Colorectal Cancer

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Abstract

Colorectal cancer (CRC) is the second leading cause of cancer- related deaths in the United States (1). Colonoscopy can prevent CRC by the detection and removal of precancerous lesions. In addition to CRC screening and surveillance, colonoscopy is used widely for the diagnostic evaluation of symptoms and other positive CRC screening tests. Regardless of indication, the success of colonoscopy is linked closely to the adequacy of preprocedure bowel cleansing.

Unfortunately, up to 20–25% of all colonoscopies are reported to have an inadequate bowel preparation (2,3). The reasons for this range from patient-related variables such as compliance with preparation instructions and a variety of medical conditions that make bowel cleansing more difficult to unit-specific factors (eg, extended wait times after scheduling of colonoscopy) (4). Adverse consequences of ineffective bowel preparation include lower adenoma detection rates, longer procedural time, lower cecal intubation rates, increased electrocautery risk, and shorter intervals between examinations (3,5–7).

Bowel preparation formulations intended for precolonoscopy cleansing are assessed based on their efficacy, safety, and tolerability. Lack of specific organ toxicity is considered to be a prerequisite for bowel preparations. Between cleansing efficacy and tolerability, however, the consequences of inadequate cleansing suggest that efficacy should be a higher priority than tolerability. Consequently, the choice of a bowel cleansing regimen should be based on cleansing efficacy first and patient tolerability second. However, efficacy and tolerability are closely interrelated. For example, a cleansing agent that is poorly tolerated and thus not fully ingested may not achieve an adequate cleansing.
The goals of this consensus document are to provide expert, evidence-based recommendations for clinicians to optimize colonoscopy preparation quality and patient safety. Recommendations are provided using the Grades of Recommendation Assessment, Development and Evaluation (GRADE) scoring system, which weighs the strength of the recommendation and the quality of the evidence (8).

Effect of Inadequate Preparation on Polyp/Adenoma Detection and Recommended Follow-up Intervals

Recommendations

1. Preliminary assessment of preparation quality should be made in the rectosigmoid colon, and if the indication is screening or surveillance and the preparation clearly is inadequate to allow polyp detection greater than 5 mm, the procedure should be either terminated and rescheduled or an attempt should be made at additional bowel cleansing strategies that can be delivered without cancelling the procedure that day (Strong recommendation, low-quality evidence).
2. If the colonoscopy is complete to cecum, and the preparation ultimately is deemed inadequate, then the examination should be repeated, generally with a more aggressive preparation regimen, within 1 year; intervals shorter than 1 year are indicated when advanced neoplasia is detected and there is inadequate preparation (Strong recommendation, low-quality evidence).
3. If the preparation is deemed adequate and the colonoscopy is completed then the guideline recommendations for screening or surveillance should be followed (Strong recommendation, high-quality evidence).

Dosing and Timing of Colon Cleansing Regimens

Recommendations

1. Use of a split-dose bowel cleansing regimen is strongly recommended for elective colonoscopy (Strong recommendation, high-quality evidence)
2. A same-day regimen is an acceptable alternative to split dosing, especially for patients undergoing an afternoon examination (Strong recommendation, high-quality evidence).
3. The second dose of split preparation ideally should begin 4–6 h before the time of colonoscopy with completion of the last dose at least 2 h before the procedure time (Strong recommendation, moderate-quality evidence).

Diet During Bowel Cleansing

Recommendation

1. By using a split-dose bowel cleansing regimen, diet recommendations can include either low-residue or full liquids until the evening on the day before colonoscopy (Weak recommendation, moderate-quality evidence).

Usefulness of Patient Education and Navigators for Optimizing Preparation Results

Recommendations

1. Health care professionals should provide both oral and written patient education instructions for all components of the colonoscopy preparation and emphasize the importance of compliance (Strong recommendation, moderate-quality evidence).
2. The physician performing the colonoscopy should ensure that appropriate support and process measures are in place for patients to achieve adequate colonoscopy preparation quality (Strong recommendation, low-quality evidence).

Rating the Quality of Bowel Preparation During Colonoscopy

Recommendations

1. Adequacy of bowel preparation should be assessed after all appropriate efforts to clear residual debris have been completed (Strong recommendation, low-quality evidence).
2. Measurement of the rate of adequate colon cleansing should be conducted routinely (Strong recommendation, moderate-quality evidence).
3. Adequate preparation, defined as cleansing that allows a recommendation of a screening or surveillance interval appropriate to the findings of the examination, should be achieved in 85% or more of all examinations on a per-physician basis (Strong recommendation, low-quality evidence).

FDA Approved Preparations

Recommendations

1. Selection of a bowel-cleansing regimen should take into consideration the patient's medical history, medications, and, when available, the adequacy of bowel preparation reported from prior colonoscopies (Strong recommendation, moderate-quality evidence).
2. A split-dose regimen of 4 l PEG-ELS provides high-quality bowel cleansing (Strong recommendation, high-quality evidence).
3. In healthy nonconstipated individuals, a 4-L PEG-ELS formulation produces a bowel-cleansing quality that is not superior to a lower-volume PEG formulation (Strong recommendation, high-quality evidence).

OTC Non-FDA Approved Preparations

Recommendations

1. The OTC bowel cleansing agents have variable efficacy that ranges from adequate to superior, depending on the agent, dose, timing of administration, and whether it is used alone or in combination; regardless of the agent, the efficacy and tolerability are enhanced with a split-dose regimen (Strong recommendation, moderate-quality evidence).
2. Although the OTC purgatives generally are safe, caution is required when using these agents in certain populations; for example, magnesium-based preparations (both OTC and FDA-approved formulations) should be avoided in patients with chronic kidney disease (Weak recommendation, very low-quality evidence).

Adjuncts to Colon Cleansing Before Colonoscopy

Recommendation

1. The routine use of adjunctive agents for bowel cleansing before colonoscopy is not recommended (Weak recommendation, moderate-quality evidence).

Differences in Patient Preference/Willingness to Repeat Comparisons

Recommendations

1. Split-dose bowel cleansing is associated with greater willingness to repeat regimen compared with the day before regimen (Strong recommendation, high-quality evidence).
2. The use of low-volume bowel cleansing agents is associated with greater willingness to undergo a repeat colonoscopy (Strong recommendation, high-quality evidence).

Selection of Bowel Preparation in Specific Populations

Recommendations

1. There is insufficient evidence to recommend specific bowel preparation regimens for elderly persons; however, we recommend that NaP preparations be avoided in this population (Strong recommendation, low-quality evidence).
2. There is insufficient evidence to recommend specific bowel preparation regimens for children and adolescents undergoing colonoscopy; however, we recommend that NaP preparations should not be used in children younger than age 12 or in those with risk factors for complications from this medication (Strong recommendation, very low-quality evidence).
3. NaP should be avoided in patients with known or suspected inflammatory bowel disease (Weak recommendation, very low-quality evidence).
4. Additional bowel purgatives should be considered in patients with risk factors for inadequate preparation (eg, patients with a prior inadequate preparation, history of constipation, use of opioids or other constipating medications, prior colon resection, diabetes mellitus, or spinal cord injury) (Weak recommendation, low-quality evidence) A detailed discussion of patient factors that predict inadequate preparation is presented in Appendix C.
5. Low-volume preparations or extended time delivery for high-volume preparations are recommended for patients after bariatric surgery (Weak recommendation, very low-quality evidence).
6. Tap water enemas should be used to prepare the colon for sigmoidoscopy in pregnant women (Strong recommendation, very low-quality evidence).
7. There is insufficient evidence to recommend specific regimens for persons with a history of spinal cord injury; additional bowel purgatives should be considered (Weak recommendation, very low-quality evidence).

Salvage Options for Inadequate Preparation

Recommendations

1. Large-volume enemas can be attempted for patients who, presenting on the day of colonoscopy, report brown effluent despite compliance with the prescribed colon-cleansing regimen (Weak recommendation, very low quality evidence).
2. Through-the-scope enema with completion colonoscopy on the same day can be considered, especially for those patients who receive propofol sedation (Weak recommendation, very low quality evidence).
3. Waking the patient entirely from sedation and continuing with further oral ingestion of cathartic with same-day or next-day colonoscopy has been associated with better outcomes than delayed colonoscopy (Weak recommendation, low-quality evidence)