Improving the quality of colonoscopy: Impact of efficient and safer preparation protocols and shorter waiting times

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See "Kim TO, Lee J, Seo JW, et al. Shorter waiting times from education to colonoscopy can improve the quality of bowel preparation: A randomized controlled trial." on page 75-81.

Effectively performing colonoscopy, which is the most accurate way to diagnose early pathologies in the lower gastrointestinal system, requires thorough large bowel cleansing initially. In spite of considerable efforts in clinics, incomplete colonoscopies constitute up to a third of all intended procedures, and these preclude up to 10% of all attempts (1,2). However, it is well known that adequate colon preparation is essential for successful and safe colonoscopy, whereas inadequate cleansing usually leads to a lower cecal intubation rate and higher procedural time and number of missed lesions, which may require early repeat colonoscopy, ultimately increasing overall healthcare expenditures (3,4). Rising healthcare costs are an important concern worldwide, and many studies are exploring ways to control colonoscopy-related expenditures (5-7).

Colonoscopy preparation practices can be affected by several technical or societal changes. An optimal preparation should rapidly and reliably clean the luminal fecal material while having no gross effect on the histopathologic appearance of the mucosal lining (8). Practically, it would require a short period for ingestion and evacuation, cause no discomfort, and result in no significant fluid or electrolyte shifts. At the same time, it would be palatable, simple, and inexpensive. Currently available preparation regimens fulfill some, but not all, of these criteria (9,10).

Many additional factors, including dietary restriction, type, time for taking and amount of purgatives and ingested liquid, and various patient factors, such as age, comorbidities, physical activity, and patient compliance, can influence the quality of bowel preparation (11,12). Among these factors, mainly, the type and use of purgatives and patient compliance to them with training for dietary instructions can potentially impact the overall efficiency of the procedure (12-15). Because patient choice and test preparation are complex, caution is necessary, and targeted research is required before extrapolating specific study results to different settings.

In this latest issue of the Turkish Journal of Gastroenterology, two well-designed and interesting studies investigated the primary outcomes of different preparation protocols and the effect of waiting times from receiving instructions for the procedure instruction to the quality of bowel preparation before colonoscopy. The first study by Khan et al. (16) compared the effect of polyethylene glycol (PEG) 3350 (MiraLAX®) and PEG-ascorbic acid (AA) (MoviPrep®) on colon preparation, patient satisfaction, and serum electrolytes. In the USA, before colonoscopy, many endoscopists used PEG 3350, a Food and Drug Administration-approved medicine for constipation, in combination with a sports drink (SD) such as Gatorade® for the repletion of electrolytes and bisacodyl (B) tablets (Dulcolax®) as an adjunct stimulant laxative owing to its high patient tolerability and good-quality bowel cleansing. Some clinicians have claimed that the PEG-AA regimen at a reduced volume (2 L) has high patient tolerability with efficient results. High-dose PEG-AA is not absorbed in the intestine and causes diarrhea. The addition

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of AA to PEG not only reduces the volume of the solution but also improves the taste. In this head-to-head study that compared efficacy, patient satisfaction, and effects on serum electrolytes between PEG 3350- and PEG-AA-based regimens, results revealed that the use of single-dose PEG 3350+a SD+B tablets produces an inferior bowel preparation for colonoscopy than split dose PEG-AA and does not provide any advantage with regard to patient satisfaction. PEG-AA produced statistically a significant higher quality bowel preparation in the right and transverse colon. PEG-AA also had better preparation in the left colon, although this did not achieve statistical significance. There was a statistically significant increase in serum sodium levels with PEG-AA compared with PEG 3350, but with a mean difference of only 1.19 mEq/L, which had minor clinical significance. No statistically significant change in other serum electrolytes in either group was observed. In addition to producing a higher quality bowel preparation, there was a reduction in disparities found across the three areas of the colon in the PEG-AA group. This could avoid the need for repeat colonoscopy, reduce healthcare expenditures, and prevent any additional days off from work for a patient. The authors therefore recommended not using PEG 3350 for bowel preparation and using PEG-AA.

Although several previous studies have reported many risk factors associated with inadequate bowel preparation, the relationship between the waiting time from receiving education to undergoing colonoscopy and the risk of inadequate bowel preparation has not been studied in detail thus far. Regarding this point, the second study in the latest issue of the Turkish Journal of Gastroenterology by Kim et al. (17) aimed to evaluate the quality of bowel preparation according to the waiting time for undergoing colonoscopy by dividing patients into two groups: those who underwent colonoscopy within 2 weeks (group A) or those who underwent colonoscopy more than 2 weeks (group B) after being educated about the procedure. The rate of good preparation was higher in group A than in group B (78.1% vs. 59.1%, p=.002). However, the rate of adequate preparation did not significantly differ between groups A and B (100% vs. 98.5%, p=.324).

Although no significant dose-response relationship between the waiting time and quality of bowel cleansing was observed, a numerical trend was recorded for declining bowel preparation scores from week 1 to week 3, and the total score and rate of good preparation were significantly higher in patients who had undergone colonoscopy within 2 weeks after being educated.

The authors suggested that the shorter waiting times from receiving education to undergoing colonoscopy can improve the quality of bowel preparation. The important result of this study is that in recent years, for every clinic, the demand for undergoing colonoscopy is increasing owing to increased awareness about colorectal cancer and screening programs. This may prolong waiting times and have a poor impact on better preparation and results. Therefore, ensuring sufficient staff numbers and equipment for performing endoscopy to reduce waiting times and increasing contacts by telephone, e-mail, and SMS to reinforce bowel preparation education when waiting times cannot be changed may be useful approaches to improve outcomes (18). Recently, as an educational tool, smart phone applications developed for colonoscopy preparation were found to be easy and convenient, and they enhanced colonoscopy preparation quality, patient adherence to instructions, and patient satisfaction (19,20).

Thus, bowel preparation for colonoscopy is influenced by the cleansing effectiveness of different protocols, ease of administration and completion, adverse effects, patient tolerance, and waiting times. We need to take more efforts to overcome obstacles at the preparation stage of colonoscopy to achieve more adequate and accurate results. Ongoing efforts to improve efficacy and safety using more patient-oriented regimens can make an important contribution to improve colonoscopy quality and result reliability.

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