

Review Article

Preparation for Colonoscopy and Patient Requirements

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Abstract

Colonoscopy is an important procedure in the diagnosis and treatment of colorectal diseases. The success of this procedure is directly related to the sufficient bowel preparation before colonoscopy. Insufficient preparation for colonoscopy may cause repetition of the procedure and loss of labor, time and cost for the patient and healthcare personnel. In this review based on the literature, preparation for colonoscopy and patient requirements are included.

Key words: Colonoscopy, Preparation, Patient Requirements.

1. Introduction

Colonoscopy is the most valid test method in terms of sensitivity and specificity in the diagnosis of lower gastrointestinal pathologies (1). With colonoscopy, precancerous polyps in the large intestine are removed, and the cellular structure of the removed polyps are examined by histopathological methods. The success of this screening method, which has an important place in diagnosis and treatment, is higher than other screening methods (2). In preparation for the colonoscopy procedure, it is mostly recommended to follow a liquid-based diet, to use laxatives 3 days before the procedure, and to empty the intestines by drinking all of the large-volume mixtures containing Polyethylene Glycol (PEG) the day before the procedure (3, 4). The most commonly used drugs for bowel cleansing are PEGs,

sodium phosphate, and sennosides. PEG is an isotonic oral solution, is not digested and absorbed. The most important disadvantages of PEG solutions, which are used safely in many patient groups in bowel cleansing, are that they are taken in a high volume and that they taste bad (5). Sodium phosphate-containing solutions are laxative drugs, which can be well tolerated by patients due to their low volumes, but should be used carefully against the risk of kidney failure due to their hyperosmolar nature (6, 7).

Bowels should be prepared well to perform good imaging with colonoscopy and to detect and remove existing polyps. In an ideal bowel preparation, colonic mucosa should be clearly visible in colonoscopy and there should be no solid or liquid residue (8-12).

2. Preparation for colonoscopy

2.1. Diet

A clear liquid diet before a colonoscopy is shown as strong evidence-level practice according to American Society for Gastrointestinal Endoscopy (ASGE) and European Society for Gastrointestinal Endoscopy (ESGE) guidelines (6). According to this diet, patients only consume clear liquids the day before the colonoscopy. They are asked to avoid granular and red-colored liquids, as their color will be similar to blood during colonoscopy. This diet contains no solid food, and it is recommended to consume energy-rich liquid and pulp-free liquids containing salt and mineral that aim to replace the deficiencies that may occur due to a one-day diet restriction. Purified water, coffee or light tea, flour-free soups and lemonade can be recommended as clear liquids. It is recommended to drink plenty of liquids and drink at least 2 liters of water before the procedure (13). Continuation of sufficient hydration during the bowel preparation process ensures that electrolyte imbalance and dehydration can be prevented (14). However, diet continues to be an important aspect of bowel preparation, especially if the preparation is made with more tolerable low-volume preparations such as oral sodium sulfate and sodium picosulphate or magnesium citrate (15).

2.2. Medications

Many medications with a little water are allowed until the day of the colonoscopy, and even before the colonoscopy. Since oral intake will decrease before the procedure, the dosage of some drugs such as diabetes medications may need to be adjusted. Oral iron intake should be stopped at least one week before the colonoscopy because the residue is black,

viscous, and difficult to clean. (16).

Bowel cleansing medications should be safe, easy to use, cheap, tolerable, should not cause patient discomfort and deterioration of the fluid-electrolyte balance. However, none of the current preparation medications have all of these features (13, 17).

2.2.1. Polyethylene Glycol/Macrogol Solutions

This solution, which has an isoosmotic composition, keeps the electrolytes in balance by minimizing the fluid exchange in the intestinal membrane. Polyethylene glycol has a high molecular weight and a polymer structure that is not absorbed in the intestinal mucosa. It manifests its effect in colon cleansing by diluting the stool. The advantages of PEG solutions are that they do not damage the colon mucosa and cause electrolyte imbalance. PEG solutions are prepared with 4 liters of water (18). To increase patient compliance, it is recommended that the solution be drunk in divided doses: half in the evening, and the other half in the morning of the colonoscopy (6).

2.2.2. Hyperosmotic Solutions

These solutions, which contain magnesium or phosphate, cleanse the intestines with osmotic force and cause intestinal distension by providing water passage to the intestinal system and creating an excretory effect. Its advantages are that it can be highly tolerated by the patient and that it is less in volume. The disadvantage is that it draws water into the intestine, causing electrolyte imbalance (18, 19).

2.2.3. Magnesium Citrate

In the preparation with magnesium citrate, a five-day low-residue diet, and a clear liquid diet, on the last day, are applied. (19).

2.2.4. Stimulant Laxatives

These are easy-to-use, low-cost herbal medicines with few side effects for bowel cleansing (7). These drugs, which perform bowel cleansing by increasing peristalsis and causing fluid secretion in the intestinal lumen (6).

3. Patient requirements in preparation for a colonoscopy procedure

The desired bowel cleansing is defined by ASGE as the rapid clearance of all macroscopic and microscopic fecal loads in the colon without disturbing the comfort and fluid-electrolyte balance of the patient (18). While evaluating the requirements of the patient preparing for a colonoscopy procedure, independent factors affecting bowel cleansing should be examined; and it is recommended to prepare individual preparation instructions with intensive training for patients with insufficient preparation determinants instead of the standard bowel preparation training (13, 20, 21).

Studies show that patients experience discomfort such as changes in eating and drinking habits during the diet restriction due to preparation for colonoscopy, and changes in taste, bloating, nausea, vomiting during the use of the preparation drug, pain, and diaper rash in the anus region due to frequent defecation on the day before the procedure, and insomnia during the night before the procedure (22, 23). It has also been shown that endoscopic interventions often cause anxiety and concerns in patients, and the reasons for these feelings may be due to lack of information about the operation, fears that they will feel discomfort or pain during the preparation and the procedure (23). Providing individual training for patients for colonoscopy preparation and keeping their compliance with the preparation

instructions at the highest level are necessary approaches for a successful colonoscopy (6). It has been reported that the pre-colonoscopy patient education program given by healthcare professionals increases compliance with the procedure, provides sufficient bowel preparation, so the colonoscopy procedure will not be repeated, and therefore reduce costs (3). It has also been shown that with the increase in the level of knowledge of the patients, their anxiety and concerns towards the procedure decrease, and the psychosocial support given to the patient increases the satisfaction and motivation levels (24-26). It is recommended that patient education, which can increase patient compliance for bowel preparation, should include verbal and written instructions, be given in plain language and an easy-to-apply manner (3). Patients should be educated about all components of bowel preparation, and the importance of compliance with the preparation process on colonoscopy procedure results should be emphasized (3). The educational tools used should be applicable to all patients regardless of their education level and health literacy (13). Patients should be supported and the process should be managed to this end, patients should be reminded of their appointments by phone, it should be confirmed that the use of diet and preparation drugs is understood, and the importance of the use of the entire drug should be emphasized (8).

4. Conclusion

The success of the colonoscopy procedure is directly related to the sufficient bowel preparation being made a priority. Planning the patient for bowel preparation according to the patient's needs before colonoscopy, it in simple and

understandable language, and in an easy-to-apply manner, will increase the success of the procedure.

5. Conflict of interests

The author declares no conflict of interests.

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