

The impact of additional oral preparation on the quality of bowel preparation for colonoscopy

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Background/Aims: The data on the salvage option for patients whose bowel preparation is predicted to be inadequate are limited. This study aimed to evaluate the impact of additional oral preparation at the same day of colonoscopy on the quality of bowel preparation in patients showing opaque yellow with particles or brown effluent. **Methods:** Between September 2015 and June 2018, a multicenter, prospective endoscopist-blinded randomized controlled trial was conducted. Patients reporting their last effluent as opaque yellow with particles or brown at the time of arrival to the endoscopy unit were randomized to additional oral preparation (further preparation with 1L of PEG+Asc) group vs. Control (strongly recommend walking without taking additional purgative) group. All colonoscopies were performed on the afternoon. Bowel preparation was considered to be adequate if total Boston Bowel Preparation Scale (BBPS) = 5 points in per-protocol analysis. **Results:** A total of 157 patients were enrolled (male, 53.5%, 61.4±13.9 years old). Adequate bowel preparation was significantly higher in patients assigned to additional oral preparation group compared with control (83.3% vs. 61.0%, $p=0.002$). More patients allocated to additional oral preparation group showed nausea during the preparation compared with those in control. There were no difference in willingness to repeat bowel preparation between two groups. **Conclusions:** Additional oral preparation could be considered in patients who is predicted to be inadequate bowel preparation before colonoscopy. ClinicalTrials.gov (NCT02540031).

Table 1. Baseline characteristics of patients (n = 157)

Characteristics	Additional preparation group (n = 80)	Control group (n = 77)	p-value
Age, year	62.02 ± 12.20	60.06 ± 13.44	0.593
Male gender	55 (68.8)	55 (71.4)	0.135
BMI, kg/m ²	24.20 ± 3.47	25.00 ± 3.70	0.691
Family history of colorectal cancer	4 (5.0)	3 (3.9)	0.769
History of abdominal surgery	20 (25)	17 (22.1)	0.820
ASA score, mean ± SD	1.77 ± 0.70	1.80 ± 0.77	0.720
Comorbidity			
Diabetes mellitus	12 (15.0)	15 (19.5)	0.520
Hypertension	15 (18.8)	12 (15.6)	0.586
Cardiovascular disease	6 (7.5)	5 (6.5)	0.617
Liver cirrhosis	2 (2.5)	3 (3.9)	0.125
Thyroid disease	2 (2.5)	3 (3.9)	0.748
Kidney disease	2 (2.5)	3 (3.9)	0.744
Cardiovascular disease	5 (6.3)	2 (2.6)	0.157
Malignancy	2 (2.5)	5 (6.5)	0.133
Constipation	16 (20.0)	18 (23.4)	0.432
Medication			
B-blocker	9 (11.3)	7 (9.1)	0.218
CCB	8 (10.0)	8 (10.4)	0.185
NSAIDs	10 (12.5)	7 (9.1)	0.792
Under previous colonoscopy	70 (87.5)	77 (100)	0.721
Colonoscopy indication			
Colorectal cancer screening	28 (35.0)	22 (28.6)	0.562
Colorectal cancer family history	2 (2.5)	3 (3.9)	
History of polyps	30 (37.5)	25 (32.5)	
Personal history of malignancy	6 (7.5)	7 (9.1)	
Other indications*	14 (17.5)	16 (20.8)	

*Data are n (%). *Other indications include abdominal pain, anemia, diarrhea, constipation, hematochezia or melena, positive result of stool occult blood, weight loss and inflammatory bowel disease. BMI, Body mass index; ASA, American Society of Anesthesiologists comorbidity; B-blocker, beta blocker; CCB, calcium channel blocker; NSAIDs, non-steroidal anti-inflammatory drugs.

Multiple Rapid Swallow and Viscous Swallow are Useful for Detection of Esophageal Motility Disorder

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Background/Aims: The diagnosis of esophageal motility disorders by the Chicago classification is based on single water swallows. We aimed to evaluate whether multiple rapid swallows (MRS) and semi-solid swallows can increase sensitivity for motility disorders. **Methods:** Consecutive patients who were referred for investigation of esophageal symptoms were recruited at Ajou University Hospital. High resolution manometry (HRM) using a 24-channel water perfused system was done. The patients were asked to perform ten swallows of 5 mL water, and then a multiple rapid swallowing test (50 mL water swallows) (Study 1). Ten swallows of 5 mL plain yoghurt (Yoplait) was conducted (Study 2). Chicago classification version 3 was applied. Hypocontractile motility disorders were classified mild ineffective esophageal motility (IEM) (ineffective contractions < 70%), severe IEM (ineffective contractions ≥ 70%), and absent contractility. **Results:** Study 1 and study 2 were conducted in 151 patients (52.6±15.5 years, 48% female) and 73 patients (49.7±16.2 years, 47% female) (Figure 1). Thirty-two out of 87 patients with normal HRM diagnosis (36.8%) showed abnormal findings of MRS (incomplete inhibition of contraction during MRS, absence of augmented contraction after MRS, and/or no decrease of IRP during MRS compared to that during water swallows) (Table 1). Twelve out of 37 patients with normal HRM diagnosis (32.4%) were diagnosed as ineffective esophageal motility with viscous yoghurt swallows (Figure 2). Seven out of 10 patients with mild IEM (70.0%), 22 out of 29 patients with severe IEM (75.9%), 3 out of 3 patients with absent contractility (100%), 10 out of 14 patients with EGJ outflow obstruction (71.4%), and 6 out of 6 patients with Jackhammer's esophagus (100%) showed abnormal findings of MRS. In HRM using viscous Yoghurt swallows, HRM diagnosis was changed in 60% of patients with mild IEM, and 33.3% of patients with EGJ outflow obstruction. **Conclusions:** MRS and semi-solid swallows can increase sensitivity for motility disorders, and provide clinically relevant information, particularly in patients with normal or hypocontractile motility disorders.

