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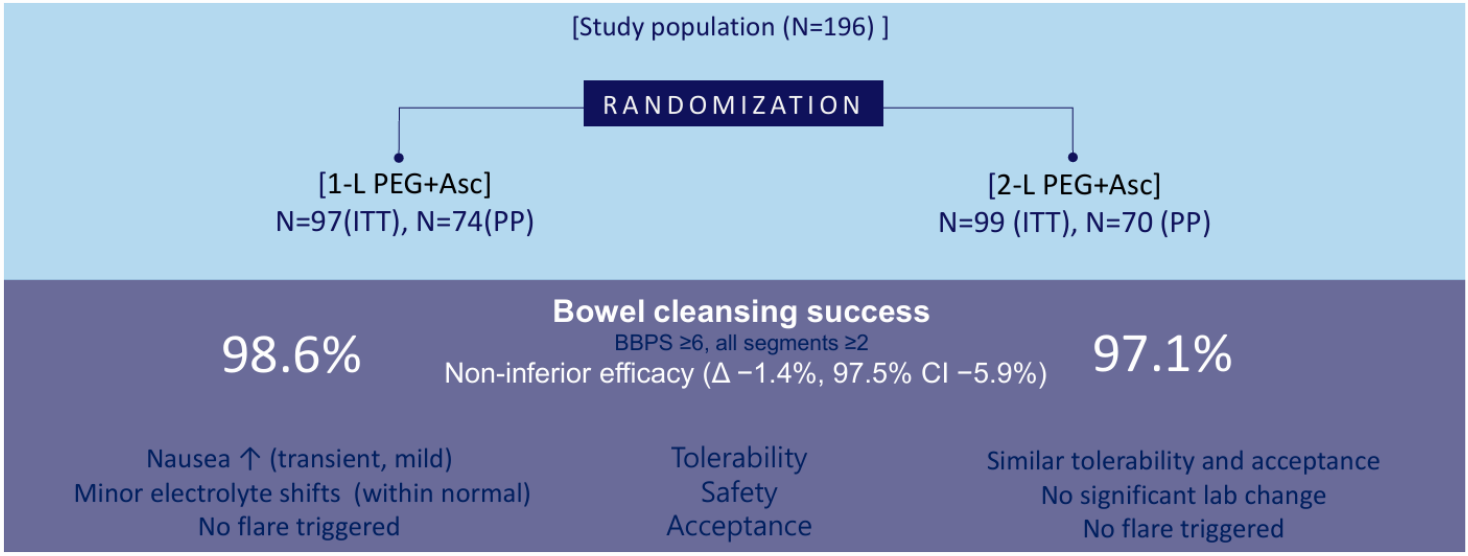
1-L PEG+Asc vs 2-L PEG+Asc Bowel preparation for inactive Ulcerative Colitis



Lee, et al.

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One-liter polyethylene glycol with ascorbic acid provides comparable cleansing quality to two-liter regimen in bowel preparation for patients with inactive ulcerative colitis – A randomized, multicenter, single-blind trial

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Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

Abstract

Introduction: Patient-centered care for ulcerative colitis (UC) involves reducing the burden associated with colonoscopy, particularly bowel preparation. Although low-volume preparations have become common in the general population, data on the use of 1-L polyethylene glycol with ascorbic acid (PEG+Asc) in patients with UC are limited. We compared the efficacy, safety, and acceptability of 1-L and 2-L PEG+Asc in patients with quiescent UC.

Methods: This was a multicenter, randomized, single-blind, non-inferiority study. Adult outpatients with UC who had stable disease activity were randomly allocated to 1-L or 2-L of PEG+Asc for colonoscopy. Degree of bowel cleansing was assessed using the Boston Bowel Preparation Scale and rated as successful cleansing if the score was ≥6 with all segment scores ≥2. Patient acceptance (ease of administration and willingness to repeat) and tolerability (newly developed symptoms, such as nausea, bloating, and abdominal pain) were assessed using a four-point ordinal scale. Disease activity (partial or full Mayo score) and laboratory data before and after colonoscopy were assessed for safety concerns.

Results: Of the 196 randomized patients, 74 in the 1-L group and 70 in the 2-L group, respectively, completed the study. Successful cleansing was achieved in 98.6% and 97.1% of patients, respectively (absolute difference −1.4%, one-sided 97.5% confidence interval −5.9%), meeting the non-inferiority margin in the per-protocol analysis. A conservative intention-to-treat analysis did not meet the non-inferiority threshold. Overall tolerability and acceptability were similar, although nausea was reported more frequently in the 1-L group. No significant changes in disease activity were observed, and minor electrolyte shifts occurred more often in the 1-L group but were clinically insignificant.

Conclusions: One-liter PEG+Asc is effective and safe for bowel preparation in patients with quiescent UC and offers a viable low-volume alternative to the 2-L regimen. Careful patient selection and monitoring may be advisable in elderly or comorbid patients.

Keywords: Polyethylene glycol with ascorbic acid. Bowel preparation. Ulcerative colitis.

Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

Introduction

Patients with ulcerative colitis (UC) require lifelong endoscopic surveillance because of an increased risk of colorectal neoplasia[1]. Adequate bowel preparation is essential for optimal mucosal visualization, lesion detection, and minimization of the need for repeat procedures. However, many patients with UC report significant discomfort and poor tolerability of conventional high-volume regimens, which can lead to suboptimal preparation and missed or delayed surveillance colonoscopies[2, 3].

In addition, the psychological burden associated with frequent colonoscopies, such as anxiety and depression, may further compromise adherence to surveillance protocols in this population[4]. Therefore, improving patient comfort and convenience through better tolerated bowel preparations could play a key role in supporting long-term monitoring and enhancing clinical outcomes.

To address these challenges, recent strategies have focused on reducing the volume of bowel-cleansing agents without sacrificing efficacy. Low-volume regimens (≤2 L of active solution) have demonstrated improved tolerability compared to traditional 4-L polyethylene glycol (PEG) solutions, and have shown promising results in patients with inflammatory bowel disease (IBD), including those with UC [5-7]. Notably, very low-volume preparations such as 1-L PEG plus ascorbic acid (PEG+Asc), appear to be effective and acceptable, even in the IBD population, with no evidence of increased mucosal toxicity[8]. However, well-designed studies with sufficient sample sizes of UC populations, particularly in real-world Asian cohorts, are limited.

In this randomized controlled study, we aimed to evaluate the efficacy, safety, and tolerability of a 1-L PEG+Asc regimen compared with the standard 2-L PEG+Asc regimen in patients with quiescent UC undergoing surveillance colonoscopy.

Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

Methods

Study Design and Setting

This study was designed as a prospective, randomized, multicenter, single-blind clinical trial and was conducted at three tertiary hospitals in South Korea from April 2020 to April 2021. The study was reviewed and approved by the Institutional Research Ethics Board of each hospital, including the St. Vincent Hospital (IRB number: VC19OIDI0298). This study was conducted in accordance with the principles of the Declaration of Helsinki. Written informed consent was obtained from all participants. The trial was not registered in a public clinical trial registry prior to initiation, as prospective registration of investigator-initiated trials was not mandated by local regulations at the time. The study protocol and statistical analysis plan were developed a priori, reviewed and approved by the IRBs, and are available from the corresponding author upon reasonable request.

Participants

Eligible participants were adults aged ≥19 years with a confirmed diagnosis of UC based on clinical, endoscopic, and histopathological criteria. All participants were required to have stable disease with no recent changes in medical therapy during the preceding year[6, 9]. Patients were excluded if they had suspected bowel obstruction, a history of major gastrointestinal surgery, or severe comorbid conditions, such as advanced heart failure, liver cirrhosis, or renal impairment (defined as creatinine clearance <30 mL/min).

Randomization and Bowel Preparation Protocol

Participants were randomly assigned in a 1:1 ratio to receive either the 1-L PEG+Asc regimen (CleanViewAL®; TaeJoon Pharmaceutical Co., Ltd., Seoul, Korea) or the 2-L PEG+Asc regimen (CoolPrep®; Taejoon Korea Co., Ltd., Seoul, Korea). Randomization was performed using a computer-generated allocation list managed by independent study coordinators at each participating center. These coordinators assigned patients accordingly but were not involved in any subsequent study procedures, thereby ensuring allocation concealment.

This was a single-blind trial. The endoscopists who performed the colonoscopies and evaluated bowel cleansing using the Boston Bowel Preparation Scale (BBPS) were blinded to

group assignments. Study coordinators who provided bowel preparation instructions were necessarily unblinded due to the differences in regimen characteristics; however, they had no role in outcome evaluation.

All patients were instructed to follow a low-residue diet for 3 d prior to colonoscopy and to consume only clear liquids the day before the procedure. A split-dose regimen was administered in both groups. The 1-L PEG+Asc group received 500 mL of PEG+Asc solution per dose, followed by at least 1-L of additional clear fluid. The 2-L PEG+Asc group received 1 L of PEG+Asc solution per dose, followed by 500 mL of clear fluids. Simethicone (Gasocol®; Taejoon Korea Co., Ltd., Seoul, Korea) was administered with the final dose in both groups to minimize bubbles during endoscopy. Colonoscopies were scheduled between 9:00 am and 12:30 PM, and conscious sedation was administered upon patient request.

Outcome Measures

The primary endpoint was bowel cleansing efficacy evaluated using the BBPS. Bowel cleaning was evaluated using the BBPS after removing the retained fluid and residual debris during the procedure in three segments (right colon, transverse colon, and left colon) and given a score of 0 (solid stools) to 3 (no residual stool or mucus). Successful cleansing was defined as a total BBPS score ≥6 with all three segmental scores ≥2.[4]

Secondary outcomes included overall and segmental BBPS scores. In addition, quality indicators such as cecal intubation, adenoma detection rate, and polyp detection rate were assessed.

Patient acceptance (ease of administration and willingness to repeat), compliance (amount of intake), and tolerability (newly developed symptoms, such as nausea, bloating, and abdominal pain) were assessed using a 4-point ordinal scale. Disease activity (partial Mayo score/Mayo score) and laboratory data before and after colonoscopy were also assessed for safety concerns.

Statistical Analysis

Non-inferiority was established if the lower bound of the one-sided 97.5% confidence interval (CI) for the difference in successful cleansing rates between the two groups (1-L minus 2-L) was greater than −15.0%. The sample size was calculated based on an assumed cleansing success rate of 80% in both groups. A non-inferiority margin of 15% was selected with a one-sided significance level (α) of 0.05 and 80% power, requiring 88 patients per group (176 total). Allowing for a 10% dropout, the target enrollment was 196 patients. The choice of a 15% margin was informed by methodological precedent and clinical considerations: prior Asian non-inferiority trials using the BBPS adopted similar thresholds.[10, 11] In addition, potential variability in BBPS interpretation across multiple centers and the possibility of reduced tolerance in patients with UC supported the use of a conservative 15% margin to ensure feasibility of a multicenter trial.

The primary analysis was conducted in the per-protocol (PP) population, including only patients who completed colonoscopy with valid BBPS scoring. Non-completers were defined as patients who were randomized but did not undergo colonoscopy due to no-shows, clinical flares, or early withdrawal, and were excluded from the PP analysis. All UC flares occurred prior to the administration of bowel preparation and were therefore considered unrelated to the study regimens. To assess robustness, a conservative intention-to-treat (ITT) sensitivity analysis was also performed, in which all non-completers were imputed as failures in the 1-L group and as successes in the 2-L group. For both PP and ITT analyses, the absolute difference in success rates (1-L minus 2-L) was calculated with corresponding 97.5% one-sided CIs for non-inferiority testing and 95% two-sided CIs for interpretability.

Secondary endpoints and patient-reported outcomes were compared using chi-square or Fisher's exact tests for categorical variables and t-test or Wilcoxon rank-sum tests for continuous variables, as appropriate. A p-value < 0.05 was considered statistically significant. All analyses were performed using SPSS Statistics version 20 (IBM Corp., Armonk, NY, USA).

Results

Patient Enrollment and Study Completion

Among the 196 randomized patients, 97 were allocated to the 1-L PEG+Asc group, and 99 to the 2-L PEG+Asc group. Of these, 74 in the 1-L group and 70 patients from the 2-L group, respectively, completed the study and were included in the final analyses. Dropouts occurred because of missed colonoscopy appointments or clinical flares of UC prior to the procedure (Figure 1).

Baseline Characteristics

Baseline demographics and clinical characteristics were well balanced between the groups. Approximately 72% of the participants were in clinical remission at enrollment, with no significant differences observed in medication use or disease extent between the two arms. Patient characteristics are summarized in Table 1.

Bowel Cleansing Efficacy

In the PP population, successful bowel cleansing—defined as a total BBPS ≥ 6 and all segments ≥ 2—was achieved in 98.6% (73/74) of patients in the 1-L PEG+Asc group and 97.1% (68/70) in the 2-L group. The absolute difference in success rate was −1.4% (1-L minus 2-L), with a 97.5% one-sided CI of −5.9%, and a 95% two-sided CI of −9.6% to 1.3%, which was within the pre-specified non-inferiority margin of −15%, confirming non-inferiority.

To address potential bias from attrition, a conservative ITT analysis was conducted by assuming all non-completers in the 1-L group failed the preparation and all non-completers in the 2-L group succeeded. Under this assumption, the success rates were 75.3% (73/97) in the 1-L group and 98.0% (97/99) in the 2-L group, yielding an absolute difference of −22.7% (97.5% one-sided CI: −31.7%). Although this did not meet the non-inferiority margin, it represents an extreme scenario. Importantly, in the PP analysis—the standard for primary non-inferiority evaluation—the results demonstrated robust non-inferiority. (Table 2A)

Segmental BBPS scores did not differ significantly between the two groups across all segments of the colon. Cecal intubation was performed in every patient who underwent colonoscopy. Additionally, no significant differences were noted in the average Mayo

endoscopic subscore or adenoma detection rate. (Table 2B)

Safety, Tolerability and Patient Acceptance

The vital signs recorded immediately before colonoscopy were stable. The rates of symptom occurrence such as headache, dizziness, chills, and epigastric discomfort did not differ significantly. Bloating and abdominal pain were reported at similar frequencies across the groups ($p>0.05$). Nausea was more frequently reported in the 1-L PEG+Asc group ($p=0.001$). Patient acceptance, including ease of ingestion and willingness to repeat the regimen, did not differ significantly between the two groups. Compliance rates, including excellent and fair compliance, exceeded 97% in both groups. (Table 3)

Disease Activity Index and Laboratory Data

Laboratory findings for potassium, chloride, magnesium, calcium, phosphorus, creatinine, and osmolarity showed statistically significant changes in the 1-L group, although all values remained within the normal reference ranges. The partial Mayo scores before and after colonoscopy showed no significant changes. (Table 4)

Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

Discussion

This randomized multicenter trial demonstrated that 1-L PEG+Asc provides bowel cleansing efficacy comparable to that of the standard 2-L PEG+Asc regimen in patients with quiescent UC. These results are in line with previous findings, suggesting the potential utility of 1-L PEG-based preparations in IBD populations. For instance, Neri et al. reported a high cleansing success rate (85.4%) using a 1-L PEG-based regimen in patients with IBD, although that study included both Crohn's and UC patients, had a relatively small sample size, and did not include a control arm [8]. Our study, with its homogeneous UC cohort, adequate sample size, and randomized controlled design, adds further support to existing evidence by confirming the efficacy of 1-L PEG+Asc in a more rigorous and targeted setting.

Our primary non-inferiority analysis, based on the PP population, demonstrated that the 1-L PEG+Asc regimen achieved a cleansing success rate of 98.6%, comparable to 97.1% in the 2-L group. The absolute difference was −1.4% (97.5% one-sided CI: −5.9%), which fell well within the pre-specified non-inferiority margin of −15%. Furthermore, all patients who completed colonoscopy achieved segmental BBPS scores ≥2. To assess the robustness of these findings, we performed a conservative ITT sensitivity analysis, imputing all non-completers in the 1-L group as failures and those in the 2-L group as successes. This yielded a success rate of 75.3% vs 98.0%, with an absolute difference of −22.7% (97.5% one-sided CI: −31.7%). Although this did not meet the non-inferiority threshold, it represents an exaggerated scenario and underscores the strength of the primary PP findings.

In addition to its efficacy, our study demonstrated that the 1-L PEG+Asc regimen was not inferior to the 2-L PEG+Asc regimen in terms of safety, tolerability, and patient acceptance. Although mild nausea was significantly more frequently reported with the 1-L regimen, it was transient and did not interfere with preparation completion, suggesting limited clinical impact. In practice, this issue could be further mitigated through strategies such as slower administration, pre-hydration, or the use of prophylactic antiemetics in susceptible patients.[12] Importantly, the patients in both groups reported a high willingness to use the same preparation again, a finding of particular relevance in UC, where lifelong endoscopic surveillance is required. Poor tolerability of bowel preparations has been repeatedly cited as a key barrier to adherence in patients with IBD [3, 4], and given the high prevalence of

psychological distress among patients with IBD, simplifying the bowel preparation process may help reduce procedure-related anxiety and enhance long-term compliance [4]. In this context, our findings support the role of low-volume but effective regimens in improving overall patient experience and supporting sustained engagement with surveillance protocols.

Our study observed statistically significant changes in laboratory parameters, including serum electrolyte levels and osmolarity, more frequently in the 1-L PEG+Asc group. However, all values remained within the normal limits, with no clinically relevant adverse events. Similarly, previous studies have reported electrolyte disturbances following bowel preparation, particularly with low-volume hyperosmotic regimens. Hypokalemia rates of 20–24% have been noted, depending on patient characteristics and the type of preparation used [13, 14]. The addition of osmotically active substances such as ascorbic acid increases the risk of dehydration. A recent meta-analysis showed a higher incidence of dehydration and electrolyte imbalance with 1-L PEG-based NER1006 than with other preparations, including trisulfate, sodium picosulfate with magnesium citrate, and 2-L PEG [15].

Although these findings raise concerns, the overall evidence remains inconclusive. Some studies have reported greater electrolyte shifts with high-volume PEG regimens [16], suggesting that most changes are uncertain and clinically insignificant [16-19]. Therefore, while clinicians should exercise caution in older or comorbid patients in whom high-volume PEG may be preferable [20]—our findings support that 1-L PEG+Asc is safe in typical clinical settings, provided careful patient selection and monitoring. In elderly or medically comorbid patients (e.g., with chronic kidney disease or heart failure), clinicians should encourage adequate hydration, monitor serum electrolytes when appropriate, and consider modifying administration protocols (e.g., extending intake time or using adjunctive hydration) to mitigate potential risks.

Our study has several limitations. First, we included only patients with quiescent UC, which may limit the generalizability of our findings to patients with active disease. Second, the single-blind design, in which patients were aware of their assigned regimen, may have influenced the subjective assessment of tolerability. Third, baseline imbalances were present, as the 1-L group had a higher prevalence of diabetes and slightly higher Mayo

endoscopic subscores; however, these differences are unlikely to have materially affected the results, given that cleansing efficacy remained non-inferior and the mean MES in both groups was below 1.0. Fourth, a number of randomized patients did not complete the study, but all UC flares leading to exclusion occurred before administration of the bowel preparation and were not related to the regimens. Finally, while the conservative ITT analysis under these assumptions yielded a difference exceeding the non-inferiority margin, this scenario was intentionally designed to be highly stringent and does not reflect real-world practice, thereby underscoring the robustness of the per-protocol findings.

Despite these limitations, this study has several strengths. This was a randomized multicenter trial involving a homogeneous cohort of clinically inactive patients with UC, which enhanced the internal validity. The use of the validated BBPS allowed for an objective and standardized evaluation of the cleansing quality. Furthermore, we assessed both laboratory parameters and disease activity before and after colonoscopy to provide a comprehensive safety evaluation of bowel preparation regimens.

In conclusion, this randomized multicenter trial demonstrated that 1-L PEG+Asc is an effective and generally safe option for bowel preparation in patients with quiescent UC, providing a cleansing efficacy comparable to that of the standard 2-L regimen. Despite a slightly higher incidence of mild nausea, the overall patient acceptance, compliance, and safety remained high. Given its lower volume and favorable tolerability profile, the 1-L regimen may help improve adherence to surveillance colonoscopy in this population.

Revista Española de Enfermedades Digestivas
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Author Contributions: Conceptualization, JM Lee and KM Lee; methodology JM Lee and KM Lee; formal analysis, JM Lee and KM Lee; investigation, JM Lee, SJ Shin and DJ Kim; resources, JM Lee, SJ Shin and DJ Kim; data curation, JM Lee, SJ Shin and DJ Kim; writing—original draft preparation, JM Lee; writing—review and editing, JM Lee and KM Lee; funding acquisition, JM Lee and KM Lee. All authors have read and agreed to the published version of the manuscript.

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Data availability

De-identified individual participant data underlying the results reported in this article, together with the study protocol and statistical analysis plan, will be made available from the corresponding author upon reasonable request after publication, for non-commercial academic use, subject to institutional review board approval and completion of a data use agreement.

Institutional Review Board Statement: The study was reviewed and approved by the Institutional Research Ethics Board of each hospital, including the St. Vincent Hospital (IRB number: VC19OIDI0298). This study was conducted in accordance with the principles of the Declaration of Helsinki.

Informed Consent Statement: Written informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: The authors declare no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

Abbreviations

Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

The following abbreviations are used in this manuscript:

UC	Ulcerative colitis
PEG+Asc	Polyethylene glycol with ascorbic acid
IBD	Inflammatory bowel disease
BBPS	Boston Bowel Preparation Scale
ITT	Intention-to-treat
PP	Per protocol

Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

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Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

Table 1. Baseline characteristics of patients in the study

	1-L PEG + Asc (n=74)	2-L PEG + Asc (n=70)	p-value
Male Sex, n(%)	55 (68.9)	49 (70)	0.5
Age, yr †	46.3±16.2	45.3±16.0	0.7
BMI, kg/m^2†	23.7±3.0	23.7±2.7	0.9
Clinical activity, n(%)			0.1
Remission (partial Mayo score ≤ 1)	49 (66.2)	54 (77.1)	
Mild activity (score 2-3)	25 (33.8)	16 (22.9)	
Current treatment, n(%)			
5-ASA only	48 (65.8)	50 (72.5)	0.2
Immunomodulators	12 (16.4)	14 (20.3)	0.4
Biologics	9 (12.3)	6 (8.7)	0.3
Other medical condition, n(%)			
DM	9 (12.2)	2 (2.9)	0.03
Parkinsonism	0 (0)	0 (0)	0.9
Other medication, n(%)			0.5
Prokinetics	2 (2.7)	1 (1.4)	
Anticholinergics	10 (13.5)	7 (10)	
Anti-constipated drug	0 (0)	1 (1.4)	
probiotics	27 (36.5)	21 (30)	
Tricyclic antidepressants	1 (1.4)	0 (0)	0.5
Previous abdominal surgery*, n(%)	5 (6.8)	9 (12.9)	0.2
Disease duration, yr†	6.5±5.4	7.3±6.2	0.8
Interval since last colonoscopy, yr†	2.3±0.9	2.6±1.4	0.2
Sedative colonoscopy, n(%)	69 (93.2)	63 (90)	0.3

†, Mean ± standard deviation; n, number; yr, years

*, gastrointestinal surgery (bowel resection, appendectomy, cholecystectomy), obstetric and gynecologic surgery (Caesarean Section, uterine myomectomy, hysterectomy), urologic

Revista Española
de Enfermedades Digestivas
The Spanish Journal
of Gastroenterology

surgery (nephrectomy, tumorectomy)

Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

Table 2. Efficacy of bowel preparation (A) and quality indicators (B) according to both preparation (1-L PEG + Asc vs 2-L PEG + Asc)

(A)

	PP		Conservative ITT	
	1-L PEG+Asc	2-L PEG+Asc	1-L PEG+Asc	2-L PEG+Asc
Succesful preparation, n (%)	73/74 (98.6)	68/70 (97.1)	73/97 (75.3)	97/99 (98.0)
Difference in 1L – 2L	−1.4%		−22.7%	
97.5% One-sided CI	−5.9%		−31.7%	
95% Two-sided CI	−9.6% to 1.3%		Not applicable	

CI, confidence interval; ITT, intention-to-treat; PP, per-protocol;

(B)

	1-L PEG + Asc (n=74)	2-L PEG + Asc (n=70)	p-value
BBPS, total†	8.3±1.0	8.1±1.1	0.4
BBPS, RC†	2.7±0.5	2.6±0.5	0.2
BBPS, TC†	2.7±0.4	2.8±0.5	0.2
BBPS, LC†	2.8±0.4	2.7±0.4	0.1
Mayo endoscopic subscore†	0.9±1.0	0.6±0.9	0.03
Cecal intubation, yes, n(%)	74 (100)	70 (100)	0.9
Intubation time, min†	4.2±3.0	4.1±2.9	0.8
Retrieval time, min†	10.8±3.1	11.1±5.0	0.7
Adenoma detection rate, %(n)	6.8 (5)	2.9 (2)	0.2
Polyp detection rate, %(n)	28.4 (21)	22.9 (16)	0.2

†, Mean ± standard deviation; BBPS, Boston Bowel Preparation Scale; RC, right colon; TC, transverse colon; LC, left colon

Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

Table 3. Safety, tolerability and acceptance according to both preparation (1-L PEG + Asc vs 2-L PEG + Asc)

	1-L PEG + Asc (n=74)	2-L PEG + Asc (n=70)	p-value
Safety			
Systolic BP, mmHg†	127.2±14.0	125.6±16.0	0.5
Diastolic BP, mmHg†	78.9±11.1	76.6±10.7	0.2
Pulse rate†	91.0±14.1	85.4±15.4	0.06
Newly developed symptom, n(%)			
Headache	4 (5.4)	1 (1.4)	0.2
Dizziness	3 (4.1)	1 (1.4)	0.3
Chilling	1 (1.4)	2 (2.9)	0.5
Thirst	3 (4.1)	0 (0)	0.1
Tolerability[4]			
Nausea†	1.8±0.9	1.4±0.6	0.02
No or mild, n(%)	56 (75.7)	67 (95.7)	0.001
Bloating†	1.35±0.76	1.39±0.71	0.7
No or mild, n(%)	71 (95.9)	66 (94.3)	0.5
Abdominal pain/cramps†	1.24±0.53	1.13±0.53	0.1
No or mild, n(%)	73 (98.6)	69 (98.6)	0.8
Acceptance			
Ease of taking the solution[4]†	1.5±0.69	1.41±0.8	0.45
No or mild, n(%), n(%)	68 (91.9)	67 (95.7)	0.3
Willingness to repeat, n(%)	55 (74.3)	52 (74.8)	0.5
Compliance			0.2
Excellent, n(%)	69 (93.2)	69 (98.6)	
Fair: intake of at least 75%, n(%)	3 (4.1)	1 (1.4)	
Poor: intake of<75%, n(%)	2 (2.1)	0 (0)	

Revista Española de Enfermedades Digestivas
The Spanish Journal of Gastroenterology

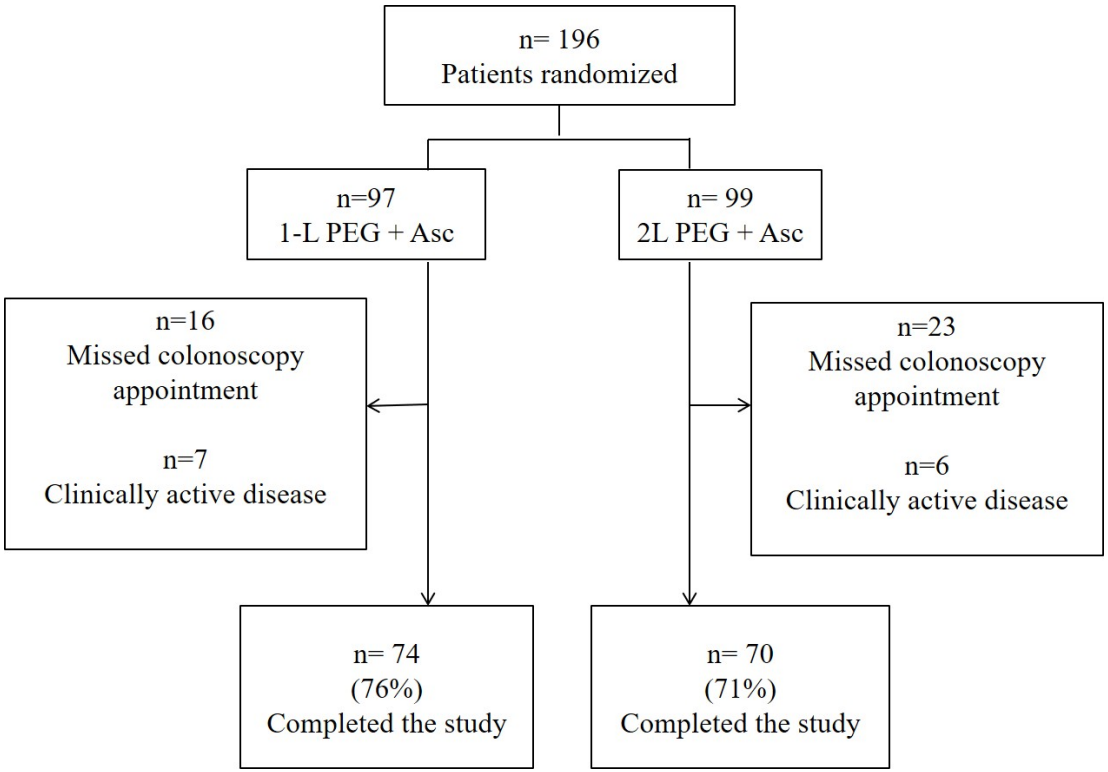
†, Mean ± standard deviation ; 4, 4-point ordinal scale (1, no distress; 2, mild distress; 3, moderate distress ; 4, severe distress); 3, 3-point scale (1, excellent: intake of the whole solution; 2, fair: intake of at least 75% of the solution; 3, poor: intake of<75%)

Table 4. Activity index and laboratory data before and after colonoscopy in 1-L PEG + Asc and 2-L PEG + Asc groups, respectively

	1-L PEG + Asc (n=74)			2-L PEG + Asc (n=70)		
	Pre	Post	p-value	Pre	Post	p-value
Activity index						
Partial Mayo score †	1.1±0.9	1.4±1.4	0.2	0.9±0.9	1.0±1.2	0.2
Laboratory findings †						
Sodium, mEq/L	139.8±2.5	139.9±2.5	0.8	144.4±26.4	139.8±2.4	0.2
Potassium, mEq/L	4.2±0.4	4.5±0.4	0.002	4.4±0.3	4.4±0.4	0.3
Chloride, mEq/L	103.5±2.6	106.7±3.1	<0.01	103.7±3.9	104.6±2.4	0.05
Magnesium, mg/dl	2.0±0.1	2.1±0.4	0.005	2.09±0.2	2.11±0.2	0.5
Calcium, mg/dl	9.3±0.6	9.6±0.6	<0.01	9.3±0.6	9.4±0.6	0.1
Phosphorus, mg/dl	3.6±0.6	3.8±0.6	0.06	3.5±0.7	3.5±0.6	0.6

Urea nitrogen, mg/dl	13.4±3.4	13.8±3.5	0.6	12.4±3.7	11.1±3.1	0.04
Creatinine, mg/dl	0.8±0.3	0.9±0.3	<0.01	0.8±0.3	0.8±3.9	0.2
Osmolarity, mOsm/kg	271.2±9.0	290.8±7.9	0.002	280.2±8.7	288.1±9.7	<0.01
Hemoglobin, g/dℓ	14.3±1.6	15.5±1.6	<0.01	14.2±1.8	14.1±1.7	0.8
WBC, 10^9/L	4.8±1.86	4.8±2.15	0.9	4.4±1.4	4.2±1.8	0.5
Platelet, 10^9/L	258.1±60.6	281.7±56.7	0.03	255.4±64.9	264.7±82.7	0.4
CRP, mg/dl	0.2±0.6	0.2±0.7	0.5	0.2±0.7	0.2±0.7	0.4

Figure 1. Flowchart of this study


n= 196
Patients randomized
n=97
1-L PEG + Asc
n= 99
2L PEG + Asc
n=16
Missed colonoscopy appointment
n=7
Clinically active disease
n=23
Missed colonoscopy appointment
n=6
Clinically active disease
n= 74
(76%)
Completed the study
n= 70
(71%)
Completed the study