Turkish Journal of Geriatrics
DOI: 10.29400/tjgeri.2024.405
2024; 27(2):319-330

Tuğba SANALP MENEKŞE[1]
Ayhan SARITAŞ[2]
Sibel GÜÇLÜ UTLU[3]
Ayşe Şule AKAN[4]
Erdal TEKİN[5]
Mustafa ERGİN[6]

CORRESPONDANCE
[1]Tuğba SANALP MENEKŞE
Phone : +905514146422
e-mail : tugba.sanalp@hotmail.com

Received : Aug 14, 2024
Accepted : Aug 25, 2024

[1] Ankara Etlik City Hospital, Department of Emergency Medicine, Ankara, Turkey
[2] Aksaray University, School of Medicine, Department of Emergency Medicine, Aksaray, Turkey
[3] Erzurum Training and Research Hospital, Department of Emergency Medicine, Erzurum, Turkey
[4] Kayseri City Hospital, Department of Emergency Medicine, Kayseri, Turkey
[5] Atatürk University, Faculty of Medicine, Department of Emergency Medicine, Erzurum, Turkey
[6] Aksaray University Training and Research Hospital, Department of Gastroenterology, Aksaray, Turkey

ORIGINAL ARTICLE

EFFECTIVENESS OF SENNA IN TREATING CHRONIC CONSTIPATION IN GERIATRIC PATIENTS PRESENTING TO THE EMERGENCY DEPARTMENT: A RANDOMIZED, DOUBLE-BLIND, MULTICENTER STUDY

Abstract

Introduction: Chronic constipation is prevalent in the geriatric population. Undiagnosed and untreated constipation can lead to complications and decreased health-related quality of life. The aim of this study was to compare the therapeutic effectiveness of senna alone with a combination of bisacodyl and senna in patients diagnosed with chronic constipation.

Materials and Method: This prospective, multicenter, double-blind, randomized controlled trial included patients aged 65 years and older who presented to the emergency department with chronic constipation, diagnosed according to the Rome IV criteria, between July and October 2023. Patients were randomly assigned to either the senna group (20 mg sennoside B) or the senna + bisacodyl group (3 mg sennoside B + 5 mg bisacodyl). Participants took the drugs twice daily for 28 days. The Constipation Scoring System and Patient Assessment of Constipation Quality of Life scores were calculated before and after treatment for each patient.

Results: The study included 105 patients, with 54 in the senna group and 51 in the senna + bisacodyl group. There was a statistically higher need for dose reduction because of drug side effects in the senna + bisacodyl group compared with the senna group ($p=0.026$). Following treatment, the senna group had a higher score on the Constipation Scoring System and Patient Assessment of Constipation Quality of Life compared with the senna + bisacodyl group, and the difference was statistically significant ($p<0.001$, $p=0.012$).

Conclusion: In geriatric patients, short-term treatment of chronic constipation with senna is more effective than senna+bisacodyl regarding constipation severity and quality of life.

Keywords: Aged; Bisacodyl; Constipation; Quality of Life; Sennosides.

INTRODUCTION

Chronic constipation (CC) is the most common functional gastrointestinal disorder diagnosed in outpatient clinics, including emergency departments (EDs) (1). According to the Rome IV criteria, the community prevalence of CC is 10.3%, with higher rates observed in the elderly (~20%) compared with younger individuals (2,3). In elderly patients, CC significantly affects physical and mental health, as well as quality of life (QOL). In the frail geriatric population, underdiagnosed and undertreated constipation leads to complications and decreased health-related QOL. The inevitable consequences include increased ED visits and healthcare expenditures. Therefore, recognizing and appropriately managing CC in elderly patients is essential (4).

The initial treatment for CC includes patient education, dietary modifications, and lifestyle changes, such as increasing exercise, as well as fluid and fiber intake. However, these approaches often prove inadequate, and laxatives are needed for treatment (5). It has been reported that approximately 10% of community-dwelling older adults and 50% of residents in nursing homes use laxatives daily (5). In standard therapy for CC, laxatives are categorized into four types based on their mechanisms of action: bulking agents, osmotics, stimulants, and stool softeners (6). Additionally, stimulant laxatives can be grouped as diphenylmethane derivatives (e.g., bisacodyl and sodium picosulfate) and anthraquinones derived from plants (e.g., senna, aloe, and cascara).These laxatives exert their effects by stimulating the intestinal mucosa and increasing the secretion of water and electrolytes, thereby increasing water content in the intestinal lumen. They also enhance intestinal muscle contractions, promoting bowel movements (7).

It is crucial to achieving success in treating CC when it comes to improving patients' QOL and preventing potential complications. Stimulant laxatives, including both senna derivatives and bisacodyl, are widely used because of their low cost and over-the-counter availability (8). Numerous studies have investigated the therapeutic effects of stimulant laxatives in CC. However, although senna and bisacodyl are readily available without prescription and widely used across all clinics, including EDs, there is an apparent lack of comparative studies between the use of senna alone versus the combination of bisacodyl and senna. Therefore, in our study, we aim to evaluate and compare the therapeutic efficacy of these treatments in patients aged 65 years and older who present to the ED with a diagnosis of CC according to the Rome IV criteria.

MATERIALS AND METHOD

Study design

Our study is a multicenter, prospective, double-blind, randomized controlled trial. It was conducted between July and October 2023 at different tertiary academic medical centers' EDs and internal medicine outpatient clinics. Patients enrolled in the study initiated ED treatment and were subsequently scheduled for follow-up in the internal medicine outpatient clinic for treatment assessment. The study population consisted of 105 patients aged 65 years and older who presented to the ED and were diagnosed with CC according to the Rome IV criteria (9). Ethical approval for the study was obtained from the ethics committee (ethics committee number: 2023–06/02). Informed consent was obtained from all participants,and the study was conducted using the principles outlined in the Helsinki Declaration. Before beginning treatment, the patients were asked to document observations for the first seven days, including the frequency of bowel movements, the consistency of their stool, and any symptoms related to their abdomen.

Patients were randomized into two groups: the senna group (20 mg sennoside B, Sennalax®,

Tripharma İlaç Sanayi ve Ticaret A.Ş., Istanbul, Turkey, n = 54) and the senna plus bisacodyl group (3 mg sennoside B + 5 mg bisacodyl, Bekunis®, Abdi İbrahim İlaç Sanayi ve Ticaret A.Ş., Istanbul, Turkey, n = 51). An assignment list with consecutive numbers from 1 to 105, pre-generated by an independent party for purposes unrelated to our study, was used to allocate study medications. Randomization of participants was conducted using randomly permuted blocks. All study medications were encapsulated in two identically sized dark gray capsules; this ensured that the appearance of the capsules did not reveal the content of the medication. The study's primary investigator kept patient identification and the numbered medication list in a safe location.

Patients with CC received 20 mg sennoside B or 3 mg sennoside B + 5 mg bisacodyl daily for 28 consecutive days. Both groups received capsules twice daily, in the morning and evening. Participants were instructed to visit the internal medicine outpatient clinic for follow-up assessments during the first and fourth weeks of treatment. Patients who did not report experiencingserious adverse effects during the first-week visit continued their treatment as prescribed.

Inclusion and exclusion criteria

The inclusion criteria were as follows:

(i) Male and female patients aged 65 years and older;

(ii) Patients diagnosed with CC according to the Rome IV criteria;

(iii) Patients who did not use medication for constipation in the last week prior to the study start; and

(iv) Individuals who gave written informed consent to take part in the research.

The exclusion criteria were as follows:

(i) Patients receiving treatment with different medications for constipation;

(ii) Patients diagnosed with irritable bowel syndrome;

(iii) Patients with renal dysfunction;

(iv) Patients with diabetes, hypercalcemia, hypokalemia, uremia, hypomagnesemia, or hypothyroidism;

(v) Patients with severe cerebrovascular disease, neurological diseases because of spinal cord lesions, multiple sclerosis, or Parkinson's disease;

(vi) Patients with heart disease;

(vii) Patients taking medications affecting the metabolism of senna and bisacodyl;

(viii) Patients using such medications as digoxin, opioids, anticholinergics, calcium channel blockers, antiemetics, antispasmodics, psychotropics, or histamine H1-H2 receptor antagonists;

(ix) Patients using medications that affect bowel movements (e.g., antibiotics, bowel control medications, antidiarrheals) or consuming specific foods and supplements (e.g., lactobacilli, oligosaccharides, bifidobacteria, dietary fiber).

Interventions and procedures

The criteria for discontinuation of medication in this study were defined as the following symptoms: diarrhea occurring ≥5 times per day, vomiting, weight loss, bradycardia, or lethargy. Patients were instructed to report these symptoms if they occurred and to consult with us. Depending on the discretion of the attending physician, the dose of the medication was planned to be reduced or discontinued in such cases. In addition, as a general guideline patients were asked to return to us if they experienced the absence of bowel movements for ≥3 days alongside abdominal symptoms. In this study, if diarrhea or abdominal symptoms were present, self-reduction of the study medication from two capsules to one capsule per day was permitted. While reduction criteria were established for this study, no rescue medication

was predetermined beforehand. Thestudy was conducted independently and did not receive any institutional financial support; therefore, all study medications were purchased by the researcher.

Measurements and questionnaires

In the study, patients were evaluated before and after treatment using the Constipation Scoring System (CSS) to assess the severity of constipation symptoms and the Patient Assessment of Constipation Quality of Life (PAC-QOL) to measure QOL (10, 11). The CSS was designed to assess symptom severity in patients with CC. It consists of eight items that define constipation symptoms, including frequency of bowel movements, duration of constipation, abdominal pain, painful evacuation, incomplete evacuation, time per attempt, need for assistance with evacuation, and unsuccessful attempts per 24 hours. The total CSS score ranges from 0 to 30, with higher scores indicating more severe constipation symptoms (10).

The PAC-QOL is a questionnaire used to measure the impact of CC on QOL and daily activities in patients with CC. It comprises 28 questions across the four following subscales: physical discomfort (4 items), psychosocial discomfort (8 items), concerns about bowel symptoms (11 items), and satisfaction (5 items). Each item on the scale is rated on a 5-point Likert scale from 0 to 4. The highest possible total score on the PAC-QOL is 140, and the lowest is 28; higher scores indicating poorer QOL as a result of constipation-related issues (11).

Elderly patients were categorized into the three following age groups for further analysis: 65–74 years (younger elderly), 75–84 years (middle elderly), and ≥85 years (older elderly). For participants with low literacy and auditory or visual impairments, the researcher read the questionnaire and scales aloud; the participants' responses were marked accordingly.

Outcome measures

The primary objective was to compare the effectiveness of two commonly used stimulant laxatives—namely, senna alone and senna plus bisacodyl combination therapy—in treating CC diagnosed in the geriatric population. The secondary objective was to compare the effects of 28 days of treatment with senna alone versus senna plus bisacodyl on the severity of constipation. In addition, the study aimed to investigate the impact of CC on QOL and daily activities.

Statistical analysis

Prior to the study, a G Power analysis was conducted, which determined a required sample size of at least 90 participants (at least 45 per group) based on an effect size of 0.6, power of 80%, confidence interval of 95%, and $\alpha = 0.05$. For the statistical analysis of the recorded data in our study, SPSS version 26 (IBM Corporation) was used. The data distribution was evaluated using the Kolmogorov–Smirnov and skewness–kurtosis tests. Categorical variables were presented as the number (n) and percentage (%) and compared using the Chi-square test. For the analysis of numerical variables between the two groups, an independent samples t-test was used if the data were normally distributed, and the Mann–Whitney U test was applied. A one-way analysis of variance (ANOVA) test was conducted if normal distribution assumptions were not met for analysis involving three groups with numerical variables. The significance level (p-value) was set at 0.05.

RESULTS

Participants, patients' demographic features, and general clinical characteristics

Our study included 105 patients, with 54 patients in the senna group and 51 in the senna plus bisacodyl group. The flowchart of patient enrollment is shown in Figure 1. The mean age of the senna group was 73.89 (6.10) years, and that of the senna plus

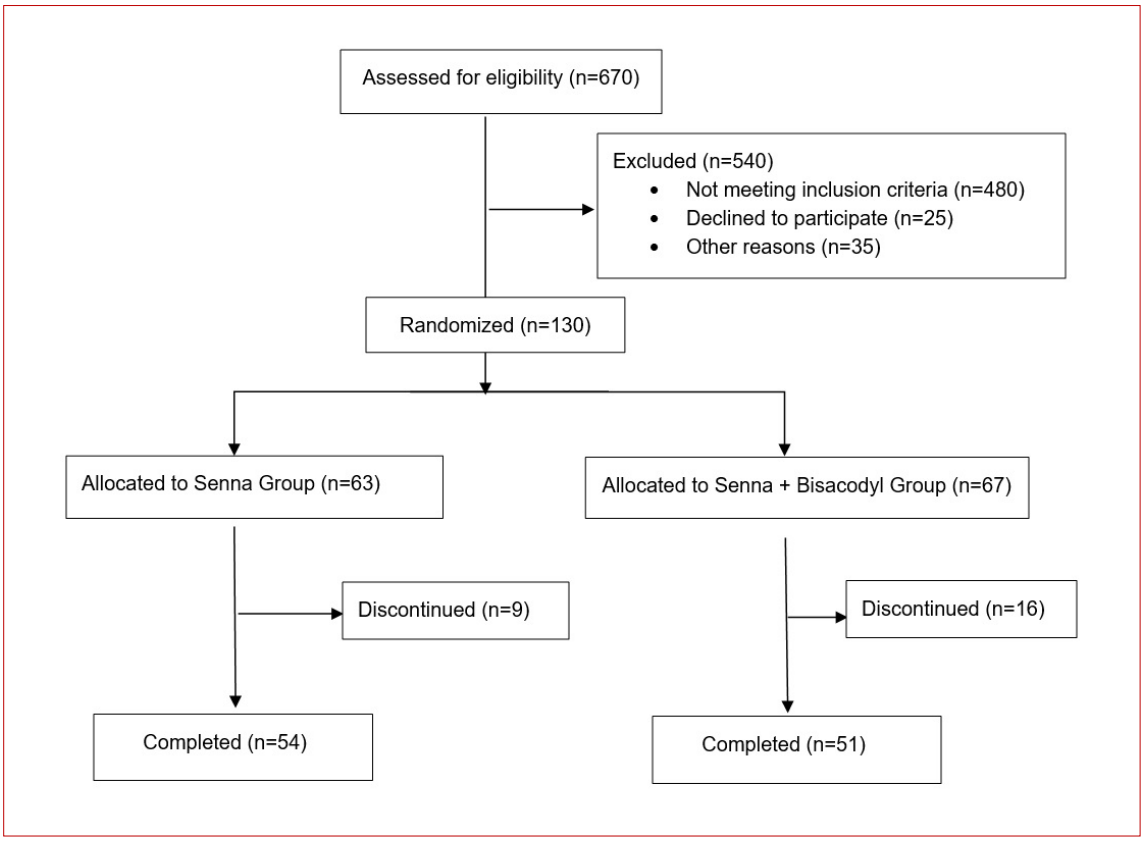

Figure 1. Flow chart of participants

bisacodyl group was 75.22 (6.60) years. There was no significant difference in age between the two groups (p= 0.287). In addition, the gender distribution did not show a statistically significant difference; 57.4% of patients in the senna group were male, and 62.7% in the senna plus bisacodyl group were male (p=0.577). Details of the patient's demographic and clinical data are presented in Table 1.

Side effects of interventions

No statistically significant difference was observed between the two groups regarding the frequency of developing medication side effects (p= 0.279). However, dizziness was statistically significantly more frequent in the senna plus bisacodyl group compared with the senna group (p= 0.011). In addition, there was a statistically higher necessity for dose reduction because of medication side effects in the senna plus bisacodyl group (p= 0.026). Detailed data on the side effects of the medication are presented in Table 2. The participants did not report the most typical side effect of senna, which is the occurrence of yellowish-brown urine.

Positive effects of interventions on constipation-related symptoms

In the senna group, greater reductions were observed compared with the senna plus bisacodyl group for the following symptoms: abdominal discomfort (p = 0.041), difficulty in defecation (p = 0.006), and incomplete evacuation (p = 0.025). The results, shown in Table 2, were statistically significant.

Table 1. Demographic and Clinical Characteristics by Drug Group

		All Patients (n=105)	Drug Group		p
			Senna Group (n=54)	Senna + Bisacodyl Group (n=51)	
Age (Year)		74.53(6.35)	73.89(6.10)	75.22(6.60)	0.287
Gender	Male, n (%)	63 (60)	31 (57.4)	32 (62.7)	0.577
	Female, n (%)	42 (40)	23 (42.6)	19 (37.3)	
Mobility Status	Independent, n (%)	46 (43.8)	27 (50)	19 (37.3)	0.264
	With help, n (%)	47 (44.8)	23 (42.6)	24 (47.1)	
	Bedridden, n (%)	12 (11.4)	4 (7.4)	8 (15.7)	
Exercise Frequency	None, n (%)	53 (50.5)	30 (55.6)	23 (45.1)	0.543
	Sometimes, n (%)	42 (40)	19 (35.2)	23 (45.1)	
	Often, n (%)	10 (9.5)	5 (9.3)	5 (9.8)	
Number of Meals	2, n (%)	42 (40)	20 (37)	22 (43.1)	0.799
	3, n (%)	57 (54.3)	31 (57.4)	26 (51)	
	>3, n (%)	6 (5.7)	3 (5.6)	3 (5.9)	
Fruit Consumption Frequency	1–2/wk, n (%)	38 (36.2)	18 (33.3)	20 (39.2)	0.772
	3–5/wk, n (%)	55 (52.4)	29 (53.7)	26 (51)	
	7/wk, n (%)	12 (11.4)	7 (13)	5 (9.8)	
Daily Water Consumption (Glasses)	1–3/day, n (%)	43 (41)	21 (38.9)	22 (43.1)	0.678
	4–10/day, n (%)	51 (48.6)	26 (48.1)	25 (49)	
	>10/day, n (%)	11 (10.5)	7 (13)	4 (7.8)	
BMI (kg/m2)		28.58(2.57)	28.78(2.60)	28.37(2.54)	0.423
Constipation Duration (Weeks)		24.91(4.68)	24.43(4.66)	25.43(4.69)	0.273
CSS (Before Treatment)		23 (14–29)	22 (14–29)	24 (14–29)	0.583
PAC-QOL (Before Treatment)		103.88(12.85)	105.09(15.16)	102.59(9.82)	0.315

BMI: Body mass index; CSS: Constipation Scoring System; PAC-QOL: Patient Assessment of Constipation Quality of Life

Changes in CSS and PAC-QOL after treatment

In the study, significant differences were observed between the senna group and the senna plus bisacodyl group in terms of changes inthe post-treatment CSS scores ($p<0.001$). Specifically, the senna group showed a statistically significantly greater reduction in CSS scores than the senna plus bisacodyl group, indicating that senna alone resulted in more improvement in constipation symptoms. Similarly, the post-treatment PAC-QOL scores showed a significant difference between the two groups, with the senna group demonstrating superior outcomes compared with the senna plus

Table 2. Distribution of Drug Side Effects and Positive Response to Treatment

	Drug Groups		p
	Senna Group	Senna + Bisacodyl Group	
Side Effects Seen, n (%)	25 (46.3)	29 (56.9)	0.279
Abdominal pain, n (%)	18 (33.3)	19 (37.3)	0.674
Diarrhea, n (%)	8 (14.8)	15 (29.4)	0.071
Nausea, n (%)	8 (14.8)	10 (19.6)	0.515
Weight loss, n (%)	7 (13)	5 (9.8)	0.611
Dizziness, n (%)	6 (11.1)	16 (31.4)	0.011
Dose Reduction Requirement, n (%)	8 (14.8)	17 (33.3)	0.026
Reduction in Swelling, n (%)	39 (72.2)	31 (60.8)	0.214
Reduction in Bloating, n (%)	39 (72.2)	27 (52.9)	0.041
Decreased Difficulty in Defecation, n (%)	44 (81.5)	29 (56.9)	0.006
Decrease in the Feeling of Incomplete Defecation, n (%)	39 (72.2)	26 (51)	0.025

Table 3. Comparison of Constipation Scale Difference and Constipation Score Difference by Drug Group

	Drug Group						p^{Δ}
	Senna Group			Senna + Bisacodyl Group			
	Before	After	Δ	Before	After	Δ	
CSS	22 (14–29)	19 (11–24)	3 (-8 - 11)	24 (14–29)	21 (11–27)	2 (-2 - 5)	<0.001
PAC-QOL	105.09(15.16)	81.28(15.18)	23.82(9.69)	102.59(9.82)	84.25(9.69)	18.33(11.97)	0.012

CSS: Constipation Scoring System; PAC-QOL: Patient Assessment of Constipation Quality of Life; Δ: Value change

bisacodyl group (p= 0.012; Table 3, Figure 2). This suggests that patients treated with senna alone reported greater QOL improvements related to constipation. In addition, within the senna group, variations in CSS scores were assessed for the older elderly (≥85 years), middle elderly (75–84 years), and youngest elderly groups (65–74 years). Levene's test indicated homogeneous variance across these groups. A one-way ANOVA analysis revealed a significant difference in constipation scale changes among these age groups ($F_{2\text{-}51}$ = 3.763, p= 0.03). Hochberg's GT2 multiple comparison test indicated that the difference stemmed from comparisons between the middle elderly and older elderly age groups. Specifically, it was concluded that the effectiveness of senna treatment alone was statistically significantly lower in the older elderly group than in the middle elderly group.

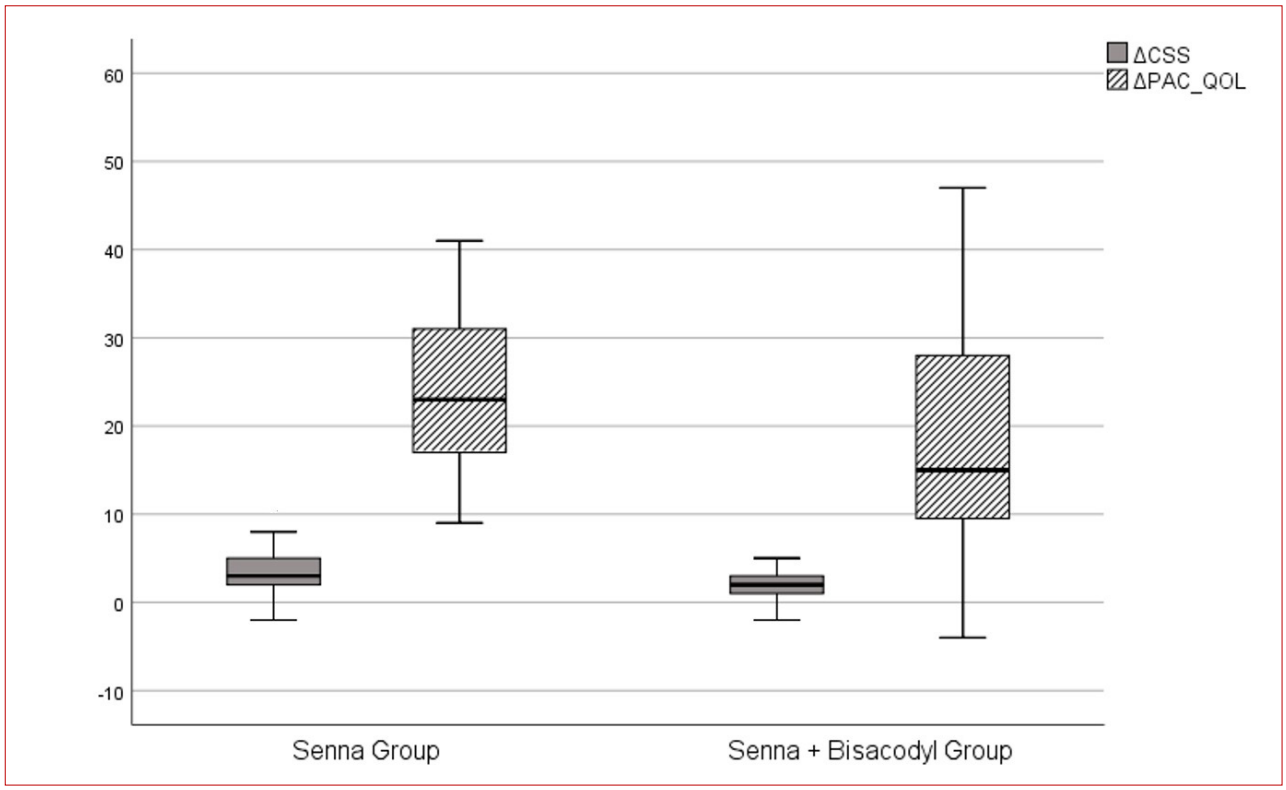

Figure 2. Post-treatment changes in CSS and PAC-QOL in by drug group

DISCUSSION

This study compared the efficacy of senna or senna + bisacodyl combination therapy, two commonly used stimulant laxatives, in elderly adults presenting with constipation in the ED. In addition, it examined the changes in CSS and PAC-QOL associated with these single and combined treatments. This is the first study to evaluate the combined use of senna and bisacodyl from the stimulant laxative class in patients aged 65 and older using CSS and PAC-QOL to assess their effects on constipation. Overall, the results of our study demonstrated that monotherapy with senna is more effective than its combined use with bisacodyl in the outpatient treatment of CC in elderly patients. Additionally, findings showed that senna monotherapy reduced the severity of constipation and positively affected the quality of life.

CC is a diagnosis associated with a significant burden on patients, healthcare resources, and costs; often, it leads to frequent ED visits. Studies have shown that there has been an increase in both outpatient and emergency room visits related to constipation in the United States since the early 2000s. Elderly patients constitute a substantial portion of emergency visits related to CC. Therefore, early and effective outpatient treatment for CC is crucial when it comes to preventing recurrent ED visits and complications, especially in the elderly (12). The increasing prevalence of CC in the elderly is primarily due to age-related physiological changes. Reduced physical activity and the use of multiple medications to treat comorbidities are major contributors to constipation in this population (13). In the absence of appropriate intervention for CC, elderly individuals are likely to become dependent

on care because of a decline in functional abilities and participation in daily activities (14). Current guidelines emphasize that standard treatment for CC in the elderly often includes pharmacological therapy when improvements in terms of diet and lifestyle changes are challenging. Laxatives form the cornerstone of pharmaceutical treatment for constipation, and they are widely used in treating and preventing constipation in elderly populations. Because of their physiological fragility, elderly individuals require careful assessment and personalized selection of laxatives based on their comorbidities, concomitant medications, and potential side effects (15).

Stimulant laxatives are widely reported to be used both by prescription and over the counter (16). As in all clinics, in the ED, stimulant laxatives are the most commonly prescribed medications in visits related to CC. Bisacodyl, a diphenylmethane derivative, and senna, an anthraquinone derivative, are considered rescue therapies for patients who do not respond to defecation. However, their long-term use is limited because of undesirable effects, such as abdominal pain, cramping, diarrhea, bloating, and electrolyte disturbances (17). A recent systematic review by Rao and Brenner indicated that over-the-counter medications such as senna and bisacodyl are effective in the treatment of CC, but they are also associated with common gastrointestinal side effects, such as abdominal pain and diarrhea. It was reported that a dose reduction of senna can improve tolerance (18).

The review by Rao and Brenner also noted that senna therapy was classified as recommendation grade A and evidence level I among over-the-counter laxatives. In contrast, bisacodyl therapy is classified as a class B recommendation and level I evidence (18). The most frequent adverse effects we saw in our study assessing these drugs' short-term use were nausea, diarrhea, abdominal pain, lightheadedness, and weight loss. Dizziness was significantly more frequent in combination therapy than it was in single therapy. Furthermore, the need for dose reduction was significant in 33.3% of the patients receiving combination therapy. Therefore, we think that it is essential to closely monitor elderly patients receiving combination therapy, which has a high potential for side effects. In addition, considering the high potential for adverse effects, we propose that this medication group should not be easily accessible to patients; it should require a prescription.

The efficacy or safety of the long-term use of stimulant laxatives still lacks sufficient research; hence, they are recommended primarily as short-term or rescue therapies. Bisacodyl and senna differ in their metabolites. Bisacodyl is metabolized in the intestines to an active metabolite called bis-(p-hydroxyphenyl)-pyridyl-2-methane, which is known to directly stimulate colonic peristalsis by acting on the colonic mucosa. It is understood that irritation occurring in the colon is attributable to this metabolite. When converted into active metabolites by intestinal bacteria, senna stimulates the production of prostaglandin E2 and the secretion of chloride ions, thereby promoting peristalsis in the large intestine and increasing moisture content in the bowel (19). A recent meta-analysis confirmed that bisacodyl significantly increases the number of spontaneous bowel movements per week when administered daily, with efficacy ranging from 78% to 99%. Furthermore, the study emphasized that bisacodyl is effective and safe for up to four weeks of treatment. Because of limited evidence about their long-term safety, however, stimulant laxatives are not recommended for use beyond one month (16).

In a recent guideline from the American Gastroenterological Association, bisacodyl was noted to be effective in treating constipation and improving QOL, despite its high potential for side effects. There is limited evidence from long-term studies of senna, but it has been reported that senna is effective for the short-term treatment

of constipation, even if dose reduction is often necessary. Thus, senna is highlighted among over-the-counter medications as preferred for the short-term management of CC (20). In a trial conducted by Morishita et al., senna dramatically enhanced QOL and increased the frequency of bowel movements compared with a placebo. In the senna group, there were significant alleviation in the following symptoms: abdominal bloating, straining when passing feces, and afeeling of incomplete evacuation. However, there was no improvements in abdominal pain. Senna's narcotic impact could be one explanation for this. As done in our study, Morishita et al. permitted patient-led dose reduction in the event of diarrhea or other stomach problems. The findings showed that the senna group experienced a much greater incidence of dose decrease than the placebo group did (21). Our study did not find a statistically significant difference in the frequency of drug side effects between the two groups. However, there was a statistically higher need for dose reduction because of drug side effects in the senna + bisacodyl group. Our findings also indicated that dizziness was more frequent in the senna + bisacodyl group compared with the senna group. This side effect poses challenges to the use of these medications in the geriatric population. Therefore, those selecting medications for geriatric patients should take into account dizziness as a significant side effect when selecting medications for geriatric patients.

Constipation can occur across all age groups, but elderly patients are particularly susceptible to this condition (22). Upon reviewing the literature, we did not come across studies specifically indicating an age range within the geriatric population in which stimulant laxatives are more effective. Our study population had an average age of 75 years, and the efficacy of senna alone was lower in the oldest age group. If stimulant laxatives are to be preferred in the oldest age group, based on our findings, we do not recommend senna alone. This situation could be attributed to advancing age, decreased physical activity, or diminished cognitive function.

Finally, in the literature, it has been observed that both senna and bisacodyl significantly improve PAC-QOL and CSS (21,23,24). Morishita and colleagues compared senna and magnesium oxide (MgO) treatment with a placebo in the short-term management of CC. They found that the senna and MgO group had significantly improved QOL compared with the placebo group (21). In another study, senna was compared with lubiprostone for the treatment of constipation in postoperative orthopedic patients treated with opioids. Both treatments showed beneficial effects on constipation symptoms and QOL (23). Another randomized controlled trial found that bisacodyl and sodium picosulfate significantly improved PAC-QOL scores in patients with CC (24). Our study showed that single therapy with senna was more effective on PAC-QOL and CSS in short-term treatment for constipation. Upon reviewing the literature, we did not find a study investigating the impact of senna + bisacodyl combination therapy on changes in PAC-QOL and CSS.

LIMITATIONS

This study had several limitations. First, the study population was small, which may limit the generalizability of the findings. In addition, while the senna group received 20 mg of sennoside B, the combination therapy group received only 3 mg of sennoside B, which could have affected the comparability of the treatments. Second, the study only evaluated patients admitted to the ED. Thus, the results may not apply to all elderly patients with constipation. Third, the study population consisted exclusively of geriatric patients, which could make treatment adherence and follow-up visits relatively challenging. Finally, the short duration of treatment was a significant limitation, highlighting the need for long-term prospective studies in this area.

CONCLUSION

In conclusion, CC is a common condition among elderly individuals that significantly affects QOL and healthcare resource utilization. Assessing the effectiveness of medications helps prevent potential complications. This study's findings showed that, for short-term treatment of constipation in the elderly population, senna demonstrates superior efficacy over senna combined with bisacodyl in alleviating the severity of constipation and improving QOL.

Statement of ethics: This study was approved by the Atatürk University Faculty of Medicine Training and Research Hospital, Erzurum, Turkey (approval no. 2023–06/02).

Conflict of interest statement: The authors declare no competing interests.

Funding sources: The author(s) received no financial support for this work, authorship, and/or publication.

REFERENCES

1. Oh SJ, Fuller G, Patel D, et al. Chronic constipation in the United States: results from a population-based survey assessing healthcare seeking and use of pharmacotherapy. Am J Gastroenterol 2020;115(6):895–905. (DOI: 10.14309/ajg.0000000000000614).
2. Barberio B, Judge C, Savarino EV, Ford AC. Global prevalence of functional constipation according to the Rome criteria: a systematic review and meta-analysis. Lancet Gastroenterol Hepatol2021;6(8):638–648. (DOI: 10.1016/S2468-1253(21)00111-4).
3. Vazquez Roque M, Bouras EP. Epidemiology and management of chronic constipation in elderly patients.Clin Interv Aging 2015;10:919–930. (DOI: 10.2147/CIA.S54304).
4. Wald A, Scarpignato C, Kamm MA, et al. The burden of constipation on quality of life: results of a multinational survey. Aliment Pharmacol Ther2007;26:227–236.(DOI: 10.1111/j.1365-2036.2007.03376.x).
5. Kang SJ, Cho YS, Lee TH, et al. Medical management of constipation in older adults patients: systematic review. J Neurogastroenterol Motil 2021;27(4):495–512.(DOI: 10.5056/jnm20210).
6. Maruyama M, Miida S, Sato T, et al. Effectiveness and safety of lubiprostone after switching from stimulant laxatives in elderly patients with chronic constipation. JGH Open 2023;7(9):610–617.(DOI: 10.1002/jgh3.12956).
7. Bashir A, Sizar O. Laxatives [e-book].StatPearls Publishing; 2024. [Internet]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK537246/ Accessed: 23.07.2024.
8. Ruby CM, Fillenbaum GG, Kuchibhatla MN, Hanlon JT. Laxative use in the community-dwelling elderly. Am J Geriatr Pharmacother 2003;1:11–17. (DOI: 10.1016/S1543-5946(03)80012-0).
9. Zheng S, Yao J. Expert consensus on the assessment and treatment of chronic constipation in the older adults. Aging Med2018;1(1):8–17. (DOI: 10.1002/agm2.12013).
10. Agachan F, Chen T, Pfeifer J, Reissman P, Wexner SD. A constipation scoring system to simplify evaluation and management of constipated patients. Dis Colon Rectum 1996;39:681–685. (DOI: 10.1007/BF02056950).
11. Nomura H, Agatsuma T, Mimura T. Validity and reliability of the Japanese version of the Patient Assessment of Constipation Quality of Life questionnaire. J Gastroenterol 2014;49:667–673. (DOI: 10.1007/s00535-013-0825-y).
12. Zhou AZ, Lorenz D, Simon NJ, Florin TA. Emergency department diagnosis and management of constipation in the United States, 2006-2017. Am J Emerg Med 2022;54:91–96.(DOI: 10.1016/j.ajem.2022.01.065).
13. Emmanuel A, Mattace-Raso F, Neri MC, Peterson KU, Rey E, Rogers J. Constipation in older people: a consensus statement. Int J Clin Pract 2017;71:12920. (DOI: 10.1111/ijcp.12920).
14. Sert ET, Kokulu K, Mutlu H, Yortanlı BC. Effects of Clinical Frailty Scale score on adverse outcomes and length of emergency department stay before intensive care unit admission. J Emerg Med 2024;66(1):10–19.(DOI: 10.1016/j.jemermed.2023.08.020).
15. Pont LG, Fisher M, Williams K. Appropriate use of laxatives in the older person. Drugs Aging 2019;36(11):999–1005. (DOI: 10.1007/s40266-019-00701-9).
16. Noergaard M, Traerup Andersen J, Jimenez-Solem E, Bring Christensen M. Long term treatment with stimulant laxatives – clinical evidence for effectiveness and safety? Scand J Gastroenterol 2019;54(1):27–34. (DOI: 10.1080/00365521.2018.1563806).

17. Bharucha AE, Lacy BE. Mechanisms, evaluation, and management of chronic constipation. Gastroenterology 2020;158(5):1232–1249. (DOI: 10.1053/j.gastro.2019.12.034).

18. Rao SSC, Brenner DM. Efficacy and safety of over-the-counter therapies for chronic constipation: an updated systematic review. Am J Gastroenterol 2021;116:1156–1181. (DOI: 10.14309/ajg.0000000000001222).

19. Wang H, Lee JW. Pharmacologic treatment of chronic constipation. Korean J Gastroenterol 2024;83(5):184–190. (DOI: 10.4166/kjg.2024.045).

20. Chang L, Chey WD, Imdad A, et al. American Gastroenterological Association–American College of Gastroenterology Clinical Practice Guideline: pharmacological management of chronic idiopathic constipation. Am J Gastroenterol 2023;118(6):936–954. (DOI: 10.1053/j.gastro.2023.03.214).

21. Morishita D, Tomita T, Mori S, et al. Senna versus magnesium oxide for the treatment of chronic constipation: arandomized, placebo-controlled trial. Am J Gastroenterol 2021;116(1):152–161. (DOI: 10.14309/ajg.0000000000000942).

22. Salari N, Ghasemianrad M, Ammari-Allahyari M, Rasoulpoor S, Shohaimi S, Mohammadi M. Global prevalence of constipation in older adults: a systematic review and meta-analysis. Wien Klin Wochenschr 2023;135(15–16):389–398. (DOI: 10.1007/s00508-023-02156-w).

23. Marciniak CM, Toledo S, Lee J, et al. Lubiprostonevs sennain postoperative orthopedic surgery patients with opioid-induced constipation: adouble-blind, active-comparator trial. World J Gastroenterol 2014;20:16323–16333. (DOI: 10.3748/wjg.v20.i43.16323).

24. Müller-Lissner S, Richter E, Eberlin M, Weigmann H, Mück T, Kamm MA. Bisacodyl and sodium picosulfate improve bowel function and quality of life in patients with chronic constipation—analysis of pooled data from two randomized controlled trials. Open J Gastroenterol 2017;07:32–43. (DOI: 10.4236/ojgas.2017.71005).