

The Use of Elobixibat and Lactulose for Bowel Preparation for Colon Capsule Endoscopy

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Abstract

Colon capsule endoscopy was approved for reimbursement under the national health insurance system of Japan in 2014. We decreased quantity of the castor oil and examined an intestinal irrigation degree using Elobixibat and lactulose that could maintain a discharge rate at 100% at a discharge rate and discharge time.

Keywords

Elobixibat, Lactulose, Colon Capsule Endoscopy

1. Introduction

At our hospital, specialized mainly in renal, hepatic, and diabetic diseases, we have been performing colon capsule endoscopy since December 2014. Dialysis patients are potentially susceptible to bleeding because of the fragile intestine, impaired platelet function, or oral administration of nonsteroidal antiinflammatory drugs (NSAIDs) or anticoagulants. We evaluated the efficacy of bowel preparation with castor oil for improving the capsule excretion rate. In all 20 patients (including four dialysis patients), both capsule transit time and duration of capsule endoscopy were shortened. The results are presented and briefly discussed in this report. However, a case to mistake a grease spot for polyps at interpretation by a grease spot was found in the castor oil. Therefore we decreased quantity of the castor oil and examined an intestinal irrigation degree using Elobixibat, a lactulose that could maintain a discharge rate at 100% at a discharge rate and discharge time.

2. Subjects and Methods

This study included 15 patients who underwent colon capsule endoscopy at Masu-

ko Memorial Hospital since May 2018 (8 men and 7 women with mean age of 69.0 years, including 5 dialysis patients). 3 cases did drop out. The case that one case of the drop out was person hope, and a capsule arrived at it, but it was refused to examine it, and a capsule stopped in stomach in patients on dialysis as for the cancellation, the second case to a sigmoid colon, Last one case is the case which there was no back-raking in without back-raking for constipation on the day of the testing from 4 days before testing (**Table 1**). The study was reviewed and approved by the ethics committee established in the Masuko Memorial Hospital. The patients were given explanation on the study, for which written consents were obtained.

The Second case made dialysis. Colon capsule endoscopy was performed with PillCam COLON Capsule (Medtronic, Minneapolis, MN, USA).

The recommended protocol of bowel preparation was modified (with administration of Elobixibat and Lactulosef), and success rates of completing entire colon observation were compared. The modified regimen is shown in **Table 1**. The changes from the original regimen were as follows: We gave the Elobixiba (GOOFICE: EA Pharma Japan) at the beginning of the day before enforcement and the enforcement. Lactulose (Morinaga, Japan) was administered immediately after capsule ingestion and as a booster at one and two hours later. The dose of castor oil was 10 mL at one point (**Figure 1**). This study was approved by the ethics committee of our hospital, while we obtained written consent from the participants after providing a thorough explanation of the contents and methods of this study.

3. Results

Elobixibat and lactulose the success rate in the group was 100% (12/12). It was also 100% in both non-dialysis patients (8/8) and dialysis patients (4/4) in this group. In each 12 cases ileocecum, an ascending colon, transverse colon, a descending colon, which sigmoid colic site which the intestinal irrigation degree examined was good, and there was no it in the grease spot by the castor oil.

4. Discussion

In Japan, colon capsule endoscopy was approved for reimbursement under the

Table 1. Patient demographic data.

All patients, n (%)	12 (100)
Age, year	mean 69 range 39 - 88
Gender (%)	Female 5 (50%) Male 5 (50%)
Small bowel transit time	41 min range 18 - 62 min
Large bowel transit time	101 min range 41 - 219
Total examination time	205 min range 103 - 407 min

Day before endoscopy	Time	Procedure	Regimen	Liquid volume	
	Morning, noon, and evening	Low-residue diet	Enimaclin		
	21:00	Bowel cleansing	Picosulfate sodium: 1 packet Elobixbat : 2 tablets	-	
	After 21:00		Fasting		

Day of endoscopy	Time	Procedure	Regimen	Liquid volume	total
	9:00–11:00	Bowel cleansing	Moviprep (containing Gascon Drop): 0.5 L + water (or tea): 0.25 L Elobixibat 2tablets	0.75L	0.75L
	Capsule ingestion		Ingest a capsule endoscope with Gascon: 4 mL + water: 0.1 L	-	0.85 L
	Immediately after capsule ingestion		Castor oil 15mL and lactulose 15ml , intramuscular injection of metoclopramide	-	-
	After the capsule reaches the small intestine	Confirming the arrival Enhancing peristalsis	No water intake but hard candy and gum is allowed until the capsule endoscope reaches the small intestine. Oral administration of mosapride: 4 tablets. Moviprep: 0.25 L + water (or tea): 0.125 L	0.375L	1.225L
	1 hour later	Booster	Lactulose 15ml , Teleminsoft suppository, Moviprep: 0.25 L + water (or tea): 0.125 L	0.375L	1.6L
	2 hours later	Booster	Mosapride: 6 tablets, Magcorol P: 1 package + water: 0.45 L. *. Glycerol enema at 15:30.	0.45 L	2.05 L

Figure 1. Bowel preparation regimen.

national health insurance system in 2014 and is currently performed at many institutions. At our hospital, many dialysis patients are treated on an outpatient basis [1]. Dialysis patients are potentially susceptible to bleeding because of the fragile intestine [2] [3] impaired platelet function, or oral administration of NSAIDs or anticoagulants [4] [5]. For this reason, detailed examination by capsule endoscopy appears to be useful. Because of the restriction of water intake in dialysis patients, we wanted to reduce the booster dosage as much as possible [6] [7] [8]. Therefore we discussed it about the improvement of the discharge rate using castor oil [9], but were more likely to mistake a grease spot for polyps at interpretation because the castor oil was oil. However, because could reduce quantity of the castor oil by using Elobixibat and the lactulose which used this time, and, as for the intestinal tract irrigation degree, even which case was good, using in future this method is thought to be able to examine it. Although the use of Gastrografin has been reported [10], we used castor oil because it is inexpensive and is covered by the national health insurance system of Japan. It is thought that the Elobixibat [11] [12] which we used this time goes along the adaptation of the aperient and is not caught on Japanese insurance examination because the lactulose [13] is a health food. Elobixibat is a novel ileal bile acid transporter inhibitor that is expressed in the terminal ileum for treatment of chronic constipation [14]. When the disease or resection, excessive quantities of bile acids many enter colon, thereby resulting in diarrhea [15]. By these effects, activity of the bowel movement improved, and a capsule discharge rate was

thought to improve even few fluid volumes. The examination of our castor oil showed a 100% discharge rate. Because the castor oil was oil, we could take the sense of incongruity of the oil, and there was not at all the suit of the patients dissatisfaction by putting lactulose in the castor oil in this examination because there was resistance to a person of matter in drinking. The capsule transit time after bowel preparation with Elobixibat and lactulose was shortened, and the booster dosage was also reduced. Thus, the modified protocol of bowel preparation appears to be beneficial for not only dialysis patients, but also many other patients.

5. Conclusions

The irrigation degree improved, too and was able to shorten the protocol on the basis of Elobixibat and lactulose the for the small intestine transit time.

We do large intestine transit time with maintenance of shortening of the small intestine discharge time with around 60 minutes, and we reduce intention, a fluid intake at enforcement of the large intestine capsule endoscope, and in the future examination think about the maintenance of the intestinal irrigation degree that we come to be able to depict a large intestine lesion surely safely.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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