REVISTA ESPAÑOLA DE
ENFERMEDADES DIGESTIVAS
The Spanish Journal of Gastroenterology

Title:
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DOI: 10.17235/reed.2019.5971/2018
Link: PubMed (Epub ahead of print)

Please cite this article as:
Egea Valenzuela Juan, Sánchez Martínez Ana, García Marín Ana Victoria, Alberca de las Parras Fernando. Influence of demographic and clinical features of the patient on transit times and impact the on the diagnostic yield of capsule endoscopy. Rev Esp Enferm Dig 2019. doi: 10.17235/reed.2019.5971/2018.

OR 5971

Influence of demographic and clinical features of the patient on transit times and impact the on the diagnostic yield of capsule endoscopy

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Received: 15/10/2018

Accepted: 21/01/2019

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ABSTRACT

Background: transit times in the gastric cavity and the small bowel can be easily calculated using capsule endoscopy software. The factors that can influence these times and impact on diagnostic yield have not been completely assessed.

Aims: to analyze the influence of demographic and clinical features on transit times and the impact on diagnostic yield.

Methods: a retrospective, single-center study of examinations between January 2013 and November 2017 was performed. The analyzed features included gender, age, body mass index, diabetes, thyroid disease and indications. The association and correlation between the variables were assessed, as well as the presence of positive and significant findings.

Results: six hundred and thirty-one patients were included in the study. Gastric and small bowel

transit times were 36.10 ± 48.50 and 251.82 ± 116.42 minutes, respectively. Gastric time was not affected by any of the variables. Small bowel time was longer in males, patients over 60 years of age and diabetics. Prolonged small bowel time, male gender and older age were associated with a higher diagnostic yield. Age over 60 years was the only factor independently associated with positive findings (OR: 1.550 [1.369-1.754]; p: 0.007).

Conclusions: patients over 60 years have a longer small bowel transit time and higher probability of having small bowel lesions. Males and diabetic patients also seem more likely to have longer transit times and higher rates of positive findings.

Key words: Capsule endoscopy. Gastric transit time. Small bowel transit time. Diagnostic yield.

INTRODUCTION

Capsule endoscopy (CE) is the first-line investigative technique for many diseases of the small bowel (SB) (1). The software used for CE provides data on transit times in the stomach and SB and the time spent by the capsule in the gastric cavity. The time between the first duodenal frame and the ileocecal valve can be easily calculated (2). This information may be important as prolonged times in the stomach or SB can lead to incomplete studies in which the capsule does not reach the cecum. If we could predict the patients more likely to have an incomplete study, this could be prevented by the use of prokinetics or avoid the use of these drugs in patients with expected shorter exploration times.

There is a lack of data regarding the influence of demographic or clinical data on transit times and there is no data about the influence of these times on the diagnostic yield of CE. The aim of the present study was to analyze the factors that affect gastric and SB transit times (GTT and SBTT) and the association between transit times and the capacity of CE for the detection of lesions.

METHODS

Study design

A retrospective study was performed based on the information included in a database of

patients that underwent CE; the data were included consecutively. Patients identified between January 2013 and November 2017 were included in the study.

CE procedure

All studies were performed using the PillCam™ SB3 (Medtronic Ltd., Minneapolis, Minnesota, USA); prior examinations using the former models of CE were also excluded. A bowel preparation based on a low-fiber diet during the previous 48 hours and fasting the night before study was used in most of the patients. Low doses of polyethylene glycol for bowel preparation were only used in selected cases, such as bedridden or hospitalized patients. The use of prokinetics was not included in our protocol but domperidone or eritrhomicin have been used in some patients during the study period for different reasons. A specific device installed on a gastroscope was used in patients unable to swallow the capsule in order to deliver it in the duodenum.

Patients who did not swallow the capsule by themselves and cases where purgatives or prokinetics were used were excluded from the study. Only patients under a low-fiber diet and fasting and those able to swallow the capsule were included. This was in order to obtain a homogeneous population and avoid any bias associated with heterogeneity in the patient cohort. The CE examinations were interpreted by two experienced endoscopists, with more than 200 procedures at the beginning of the study. Fellows have participated in some studies and were supervised by an expert in all cases.

Factors analyzed

Data with regard to gender, age and body mass index (BMI) and morbidities such as diabetes or thyroid disease were analyzed. Furthermore, the indication for CE such as abdominal pain, chronic diarrhea, obscure gastrointestinal bleeding (OGIB), an initial diagnosis of celiac disease, suspected complications of celiac disease, an initial diagnosis of Crohn's disease (CD), follow-up of CD and other reasons (polyposis, abnormal radiology findings, graft-*versus*-host disease, etc.) were also analyzed. The findings of the CE studies such as normal findings, vascular lesions, lesions suggestive of CD, non-steroidal anti-inflammatory drugs (NSAIDs) induced lesions and

other lesions such as polyps, tumors, portal hypertensive enteropathy, etc. were also analyzed. The significance of the findings was assessed. The CE readers in our unit indicated whether the lesions identified were significant or not in the report. Furthermore, recommendations were provided based on the endoscopic findings and clinical data of the patients, such as angioectasia, which that can be considered as significant in cases of OGIB but as a casual finding in a young patient with chronic diarrhea. GTT and SBTT have been calculated in all the patients using the capsule endoscopy software (Rapid®).

Endpoints

The primary endpoint was to analyze which of the demographic or clinical variables affect the transit times in CE studies. The secondary endpoints were to evaluate if these demographic and clinical variables themselves or the transit times can impact on the diagnostic yield of CE. Furthermore, the association between transit time and the type of lesions observed for every indication and their significance was also assessed.

Statistics

Continuous variables such as age or transit times were expressed as the mean ± standard deviation (SD). BMI was converted into a categorical variable and classified into the following groups: IBD < 18.49 (underweight), 18.5-24.9 (normal), 25 to 29.9 (overweight) and > 30 (obese). Patients were also divided into three groups according to age: < 30 years, 30-60 years and > 60 years. Percentages were used for categorical variables such as gender, morbidities, BMI group, age and indications or findings.

A non-normal distribution was observed for all variables and therefore, the median and interquartile ranges (IQR) were also calculated for continuous variables. Non-parametric tests were performed for comparisons of the mean such as Mann-Whitney and Kruskal-Wallis. The Spearman's *rho* coefficient was used for correlation analysis. Multivariate analysis was also performed with some of the variables and the odds ratio (OR) was calculated. The confidence interval (CI) of 95% was used and statistical significance was set at $p < 0.05$. Statistical analysis was performed with the SPSS® Statistics software for MacOs V.24 (IBM®).

Ethics

The study was approved by the Ethics Committee for Clinical Research of our hospital.

RESULTS

During the study period, 718 patients were identified in the database; 87 patients were excluded due to various reasons as follows. The capsule was delivered in the duodenum with a gastroscope in 24 cases; 30 patients required bowel preparation with purgatives or received prokinetics. Bowel preparation was extremely poor and examination of the SB could not be performed in eleven patients. Eleven patients presented with gastric retention of the capsule during the battery life. Two patients had an incomplete SB study after more than six hours in the gastric cavity. The SB examination was not completed after two hours in the esophagus and three hours in the gastric cavity in one case. There were five cases of capsule retention in patients with unsuspected stenoses (four CD and one case of celiac disease). Also, three patients with CD had a prolonged SBTT and the capsule did not reach the cecum with no retention.

Finally, 631 patients were included in the analysis; 392 were female (62.1%) and 239 were male (37.9%). The mean age of the patients was 53.20 ± 20.15 years and the median and IQR was 54 (39-71) years. Males were older than females in our cohort (55.89/51.54 years old; p: 0.004). Table 1 shows the characteristics of the cohort and the frequency of the demographic and clinical features.

Table 2 shows the distribution of patients with the different indications for CE and their age. Individuals with an OGIB indication were significantly older (65.27 ± 15.60 years-old [mean ± SD] *vs* 68 [56-76] years old [median and IQR]) than the patients with the rest of indications (p: 0.001). The mean GTT in the cohort was 36.10 ± 48.50 minutes and the median and IQR were 17 (8-46) minutes. In the case of GTT, the SD was higher than its mean, which was likely due to the wide data dispersion for this variable (1-404 minutes). The mean SBTT was 251.82 ± 116.42 minutes and the median and IQR were 238 (177-307) minutes. The GTT and SBTT for every indication are shown in table 2. There were no differences in the GTT among the indications (p:

0.647) and significant differences were found in SBTT, which was higher in the CD follow-up cases (p: 0.001).

Transit times were calculated according to gender, age groups, comorbidities and BMI. No differences were found for GTT, although males (p: 0.007), patients older than 60 years ($p < 0.001$) and diabetics (p: 0.017) had increased SBTT (Table 3). The correlation between continuous variables was calculated and they are shown in table 4. There was a weak positive correlation between age and SBTT (*rho*: 0.189; $p < 0.001$) and a weak negative correlation between GTT and SBTT (*rho*: -0.15; p: 0.007). There were 246 (38.9%) normal CE studies and 385 (61.1%) examinations with any kind of lesion. There were no differences in the GTT of examinations with or without SB lesions (p: 0.587). The SBTT in CE studies with lesions was higher than in those without lesions (p: 0.007) (Table 3).

With regard to the type of lesions seen in the CE studies, table 5 shows these findings for the different indications. The number of studies with positive findings for every indication and the presence of significant lesions were analyzed, which justifies the indication and may have an impact in the further management of the patients. Our results identified 385 (61.1%) examinations with positive findings and 320 (50.1%) with significant lesions. There are no differences in the GTT of patients with or without significant lesions (p: 0.374), but the examinations with significant findings had a longer SBTT (p: 0.001). Patients with significant lesions were older than those with normal or non-significant examinations ($p < 0.001$) (Table 6).

The probability of presenting any kind of lesion and significant findings in CE studies was assessed for different variables. Only patients older than 60 years had an increased risk of positive or significant findings; OR: 1.550 (1.369-1.754; 95% CI, p: 0.007) and OR: 1.789 (1.536-2.105; 95% CI, p: 0.029), respectively. There was a non-significant increased risk for males, diabetics or hypothyroid patients according to the multivariate analysis (Table 7).

DISCUSSION

According to our data, males, patients older than 60 years, diabetics and patients with a previously diagnosed CD have a significantly longer SBTT. Moreover, age over 60 years and a longer SBTT have a higher probability of positive and significant findings during CE

examinations. CE is the first-line investigation in SB disorders such as OGIB or suspected CD of the SB (1). This procedure is safe and useful in cases of suspected celiac disease (3), patients with established celiac disease and alarming features (4). CE can also be used to monitor SB involvement of CD (5) and other indications such as polyposis, abdominal pain, chronic diarrhea, tumors or gastrointestinal graft-*versus*-host disease (6-8). The CE software provides information about the transit times in the stomach and SB and this information could be valuable, although few studies have been performed that address this topic and the results are not consistent.

No differences were found in the first studies performed (2) of GTT or SBTT with regard to age, gender or BMI. These studies included examinations with the first model of CE and the M2A capsule. A negative correlation between GTT and SBTT was observed that was similar to what we found in the present study; a higher GTT was associated with a shorter SBTT and vice versa. Another older study showed that younger patients and those with suspected CD had a shorter SBTT (9). A recent study of examinations using the PillCam™ SB2 and the PillCam™ SB3 showed that patients with a previous CD diagnosis have a higher SBTT but there were no differences with regard to gender and age (10). We observed that males and patients older than 60 years had prolonged SBTT. Furthermore, we also found that patients with previously diagnosed CD also had a higher SBTT, although there were only eleven patients with this indication in our cohort. The usefulness of CE in elderly patients has also been analyzed in some studies and some studies reported that CE had a greater diagnostic yield in older patients (17,18). Our results confirm these previously published data. Moreover, and similar to what was found in one of these studies (18), OGIB is the most common indication in older patients (Table 2) and also has a higher rate of positive findings (Table 5). We also observed that age over 60 years was independently associated with higher rate of positive findings and not necessarily influenced by these associations.

With regard to comorbidities, a study of 29 patients found that diabetics had a prolonged GTT and shorter SBTT (19). According to our results, there are no differences in GTT between diabetic or non-diabetic patients, although diabetics had a longer SBTT. There were no differences between patients with hypothyroid and a normal thyroid function or between the BMI groups according to transit times.

The use of prokinetics and purgatives for the completion of CE examinations has been proposed. Some studies have analyzed the effects of these drugs on transit times and have shown that purgatives may shorten the GTT and SBTT. This suggests that it could help to increase the completion rate of CE examinations (11-14). In the case of prokinetics, especially domperidone and erythromycin, these appear to be useful to shorten the GTT but not the SBTT, and do not increase the completion rate (14,15). In fact, some studies have shown that prokinetics or purgatives do not increase the diagnostic yield of CE (13,15). Finally, a recent study analyzed the use of sham feeding with bacon as a possible stimulator of gastrointestinal transit and found no benefits with regard to GTT or SBTT. This study concluded that this strategy should not be recommended (16). The use of prokinetics or purgatives is not routinely included in the protocols of our department. In our cohort, only 30 out of 718 patients (4.2%) received purgatives or prokinetics. Among the remaining 688 cases, the SB examination was not complete in only 25 cases (3.7%) due to poor preparation in eleven cases (1.6%) or because the capsule did not reach the cecum without stenoses in 14 cases (2.1%). Our results and some previously published data support the hypothesis that these drugs are not necessary for the completion of CE studies. This could be a key point in CE protocols in terms of safety, as these drugs are associated with side-effects, especially domperidone (20,21).

A recent study of procedures using the PillCam™ SB2 and PillCam™ SB3 (10) found that there was a lower number of incomplete studies with the SB3 model (9% *vs* 3%; p: 0.04). This study did not use purgatives or prokinetics but used a protocol very similar to that used in our department. Another study compared both models of CE with simethicone and domperidone and no differences in the completion rate were observed (93.6% for the SB2 *vs* 96.2% for the SB3, p: 0.27) (22). Only CE examination studies with the PillCam™ SB3 were included in the present study and our incomplete examination rate was slightly better than that reported by previous studies (2.1% in our study *vs* 3% [10] and 3.8% [22]). In our opinion, the longer life of the batteries and other technological improvements in the modern models of CE facilitate the completion of the examinations. Furthermore, this may prevent the use of purgatives or prokinetics in most of the patients, thus avoiding their side effects.

The association between transit times and the diagnostic yield of CE has also been analyzed

previously. It has been reported that longer SBTT is associated with higher diagnostic yield (23,24). A weak positive correlation between SBTT and the presence of lesions in the CE examinations was observed in the present study and SBTT was significantly longer in patients with positive findings and significant lesions. Some authors have suggested that the use of promotility agents may negatively affect the diagnostic yield of CE by shortening the SBTT (23), whereas others have highlighted the fact that the use of prokinetics can affect the transit times and does not positively or negatively influence the detection of lesions (13). The use of these drugs is rare in our daily practice and we cannot make any conclusions in this regard due to the small number of patients under prokinetics in our cohort.

CE has been shown to have a high diagnostic yield in many published studies. In general, the rate of studies with positive findings is higher in cases of OGIB (44-84%) (25.26) than in patients with suspected CD (24-43%) (27,28). In a large recently reported study (22), the overall rate of positive studies was 76.2%, with 53.5% of relevant findings. The rate of positive findings was lower (61.1%) in our cohort but the number of cases with significant findings (50.1%) was very close to that reported in this study. The rate of positive CE studies in cases of OGIB was 75.9%, which is consistent with previous published data. In addition, there were 48.8% of positive findings in patients with suspected CD, which is slightly better than previously reported data.

According to our results, male gender, age over 60 years, diabetes and previously diagnosed CD are associated with a prolonged SBTT. In our cohort, GTT does not seem to be affected by any of the variables analyzed. On the other hand, there was a correlation between SBTT and the rate of positive findings and prolonged SBTT was associated with a higher diagnostic yield by CE. Male gender and age also correlated with positive findings. However, age also correlated with SBTT and men were significantly older than females in our cohort. Thus, it may be difficult to assess whether gender and age can predict positive findings of CE examinations or if this correlation was affected by the dependence of these variables on each other. According to the multivariate analysis, age older than 60 years was the only variable significantly and independently associated with a higher diagnostic yield. Thus, we can conclude that older patients have longer SBTT and higher rates of CE examinations with positive findings, whereas males had a longer SBTT and more positive findings, probably as they have a higher mean age

and gender cannot predict the diagnostic yield of CE by itself.

The present study includes the largest number of patients among published studies in this setting. Only studies with a single CE model and patients who followed a diet-based bowel preparation were included. On the other hand, a large number of variables were included, more than in any other previous study. In addition, a more complex statistical analysis was performed. The main limitation of the study was the single-center and retrospective study design. Nevertheless, data from the patients and the CE examinations were included consecutively in our database. Data about diabetes and thyroid disease were collected and all the diabetic or hypothyroid patients were under medication. However, we have no information about the rate of well-controlled disease and it was therefore not possible to establish an association between drug use and unstable diabetes or hypothyroidism with bowel peristalsis and transit times.

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Table 1. Demographics and clinical features of the patients

		n (%)
Age	< 30 years	96 (15.2%)
	30-60 years	274 (43.4%)
	> 60 years	261 (41.4%)
Gender	Male	239 (37.9%)
	Female	392 (62.1%)
Diabetes	Yes	163 (25.9%)
	No	468 (74.1%)
Thyroid function	Normal	550 (87.1%)
	Hypothyroidism	73 (11.5%)
	Hyperthyroidism	8 (1.4%)
Body mass index	< 18.49: underweight	38 (6.1%)
	18.5-24.9: normal	244 (38.8%)
	25-29.9: overweight	190 (30.2%)
	> 30: obese	157 (24.9%)

Table 2. Distribution of patients according to the indication, age and transit times

Indication	*n (%)*	*Age (years)*	*Gastric transit time (minutes)*	*Small bowel transit time (minutes)*
Abdominal pain	51 (8.1%)	*37.05 (32.09-42.03) ± 18.20 †35.50 (19-45.75)	*35.30 (24.39-46.21) ± 39.97 †17.50 (8-46.25)	*247.87 (223.35-272.39) ± 89.83 †248.50 (185-296)
Chronic diarrhea	72 (11.3%)	*44.87 (40.89-48.85) ± 17.54 †44 (29.50-57)	*38.75 (24.65-52.85) ± 62.12 †15 (8-36.50)	*214.08 (189.61-238.55) ± 107.82 †203 (144.50-282)
Obscure gastrointestinal bleeding	307 (48.7%)	*65.27 (63.42-66.91) ± 15.60 †68 (56-76)	*34.18 (29.40-38.96) ± 42.89 †17 (8-48)	*268.22 (255.17-281.27) ± 117.14 †247 (193.25-327.25)
Initial diagnosis of celiac disease	13 (2.1%)	*36.50 (15.45-52.55) ± 19.57 †34.50 (15.50-50.25)	*72.83 (7.37-138.30) ± 62.38 †73 (10-122.75)	*231.17 (120.86-341.47) ± 105.11 †229 (165.75-281.50)
Complications of celiac disease	12 (1.9%)	*41.30 (23.93-58.67) ± 24.27 †34.50 (21-73.25)	*17.20 (5.43-28.97) ± 16.45 †9.50 (4.50-30.25)	*299.80 (207.03-392.57) ± 129.68 †246.50 (183-426)
Initial diagnosis of Crohn's disease	135 (21.4%)	*40.32 (37.88-42.76) ± 14.23 †40 (30-49.50)	*37.41 (28.87-45.96) ± 49.80 †17 (8.50-44)	*231.77 (212.55-251.00) ± 112.10 †223 (158-286.50)

Follow-up of Crohn's disease	11 (1.7%)	*35.67 (23.68-47.65) ± 15.58 †35 (21.50-49.50)	*40.67 (7.33-74.00) ± 43.36 †17 (8.50-64.50)	*358.00 (215.38-500.62) ± 185.54 †311 (188.50-568)
Others	30 (4.8%)	*49.30 (42.35-56.25) ± 18.59 †54.50 (40-62.25)	*42.60 (18.10-67.10) ± 65.60 †15.50 (6.75-51)	*230.47 (184.95-275.99) ± 121.90 †210 139.75-298)
Overall	631 (100%)	*53.20 ± 20.15 †54 (39-71)	*36.10 ± 48.50 †17 (8-46)	*251.82 ± 116.42 †238 (177-307)

*Mean (95% confidence interval) ± standard deviation. †Median (interquartile range).

Table 3. Transit times with regard to gender, age, comorbidities and the presence of lesions

		GTT (minutes)	*p*	*SBTT (minutes)*	*p*
Gender	Male	*37.34 (30.92-43.76) ± 50.39 †17 (8-51)	p: 0.996	*270.77 (254.35-287.19) ± 128.89 †245.50 (189-330.25)	*p: 0.007*
	Female	*35.35 (30.73-39.98) ± 46.61 †17 (8-42)		*240.27 (229.68-250.86) ± 106.65 †232 (170-291)	
Age	< 30 years	*38.86 (29.23-48.50) ± 47.57 †14.50 (8-56.75)	p: 0.250	*231.31 (209.63-252.99) ± 106.99 †204.50 (165.75-269.75)	*p < 0.001*
	30-60 years	*39.21 (32.88-45.54) ± 53.19 †19 (8-48.50)		*236.80 (224.03 - 249.56) ± 107.33 †232 (170.50-287.75)	
	> 60 years	*31.84 (26.72-36.96) ± 42.01 †15 (8-41)		*275.14 (259.90-290.37) ± 124.99 †255 (195-339.50)	
Diabetes	Diabetic	*37.28 (32.66-41.91) ± 50.90 †18 (8-48)	p: 0.443	*269.18 (251.01-287.36) ± 117.52 †248 (196-317)	*p: 0.017*

	Non-diabetic	*32.72 (26.75-38.70) ± 38.65 †17 (8-46)		*245.78 (235.28-256.27) ± 115.55 †232 (172.75-298)	
Thyroid	Hypothyroid	*35.35 (20.64-50.06) ± 51.20 †14 (8-36)	p: 0.847	*248.49 (209.81-287.17) ± 134.67 †234 (149-315.50)	p: 0.975
	Normal thyroid function	*36.23 (32.31-40.15) ± 47.98 †17 (8-48)		*252.08 (242.66-261.51) ± 115.25 †238 (178-306)	
BMI	Underweight	*23.08 (14.98-31.17) ± 24.63 †10.50 (7-30)	p: 0.919	*230.61 (197.26-263.95) ± 101.45 †217 (179.25-247.50)	p: 0.078
	Normal	*42.75 (35.35-50.14) ± 58.62 †17.50 (8-56.75)		*244.13 (230.72-257.54) ± 106.33 †238 (178-290)	
	Overweight	*32.90 (27.03-38.77) ± 41.03 †17.50 (7-43)		*262.07 (243.26-280.88) ± 131.43 †242 (169-329.25)	
	Obese	*32.60 (26.22-38.97) ± 40.43 †15 (9-41)		*255.22 (237.08-273.37) ± 115.10 †241 (175-316.50)	

Findings	CE examinations with small bowel lesions	*37.01 (31.77-42.24) ± 51.97 †17 (8-49)	p: 0.587	*263.80 (251.15-276.45) ± 125.55 †243 (180-323.50)	*p: 0.007*
	CE examinations without small bowel lesions	*34.74 (29.57-39.89) ± 41.47 †17 (8-43.25)		*233.57 (221.31-245.83) ± 98.41 †231 (172-284)	

*Mean (95% confidence interval) ± standard deviation. †Median (interquartile range). BMI: body mass index; GTT: gastric transit time; SBTT: small bowel transit time; CE: capsule endoscopy. $p < 0.05$ is considered as significant.

Table 4. Correlation between some of the analyzed variables

	Age	*BMI*	*GTT*	*SBTT*
Age	-	*r: 0.405; p: 0.01*	r: -0.047; p: 0.237	*r: 0.189; p < 0.001*
BMI	*r: 0.405; p: 0.01*	-	r: -0.005; p: 0.906	r: 0.059; p: 0.139
GTT	r: -0.047; p: 0.237	r: -0.005; p: 0.906	-	*r: -0.150; p: 0.007*
SBTT	*r: 0.189; p < 0.001*	r: 0.059; p: 0.139	*r: -0.150; p: 0.007*	-

r: Spearman's coefficient (rho); BMI: body mass index; GTT: gastric transit time; SBTT: small bowel transit time. $p < 0.05$ is considered as significant.

Table 5. Type of lesions found for all indications

	n	*Normal*	*Vascular lesions*	*Crohn's disease*	*NSAIDs induced lesions*	*Others*	*Positive findings*	*Significant findings*
Abdominal pain	51	33 (64.7%)	6 (11.7%)	9 (17.6%)	2 (3.9%)	1 (1.9%)	18 (35.3%)	11 (21.5%)
Chronic diarrhea	72	48 (66.7%)	5 (6.9%)	7 (9.7%)	4 (5.5%)	8 (11.1%)	24 (33.3%)	11 (15.3%)
GI bleeding	307	74 (24.1%)	132 (42.9%)	12 (3.9%)	59 (19.2%)	30 (9.7%)	233 (75.9%)	213 (68.3%)
Suspected celiac disease	13	6 (46.1%)	0	1 (7.7%)	1 (7.7%)	5 (38.4%)	7 (53.8%)	4 (30.7%)
Complicated celiac disease	12	3 (25%)	0	0	0	9 (75%)	9 (75%)	8 (66.7%)
Suspected Crohn's disease	135	69 (51.1%)	6 (4.4%)	50 (37.1%)	2 (1.5%)	8 (5.9%)	66 (48.8%)	49 (35.5%)
Follow-up of Crohn's disease	11	1 (9.1%)	0	10 (90.9%)	0	0	10 (90.9%)	10 (90.9%)
Others	30	12 (40%)	3 (10%)	0	1 (3.3%)	14 (46.7%)	18 (60%)	14 (46.7%)
Overall	631	246 (38.9%)	152 (24.1%)	89 (14.1%)	69 (10.9%)	75 (11.9)	385 (61.1%)	320 (50.1%)

NSAIDs: non-steroidal anti-inflammatory drugs. Positive findings: any kind of lesion observed. Significant findings: lesions related to the indication.

Table 6. Transit times and patient age for capsule examinations with or without significant lesions

	Studies with significant lesions	*Studies without significant lesions*	*p*
GTT (minutes)	*36.10 (30.58-41.76) ± 50.24 †17 (8-48)	*36.04 (30.98-41.10) ± 45.87 †17 (8-46)	p: 0.374
SBTT (minutes)	*270.60 (256.21-285) ± 129.43 †248 (180.50-329.50)	*233.34 (222.44-244.24) ± 98.78 †225.50 (172.75-287)	*p: 0.001*
AGE (years)	*59.07 (56.95-61.18) ± 18.99 †62 (48-74)	*47.42 (45.25-49.58) ± 19.62 †46 (33.75-62)	*p < 0.00*

*Mean (95% confidence interval) ± standard deviation. †Median (interquartile range). GTT: gastric transit time; SBTT: small bowel transit time. $p < 0.05$ is considered as significant.