

Tolerance and Acceptability of Upper Gastrointestinal Fibroscopy Under Local Anesthesia with Premedication

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Abstract

Introduction: Gastroscopy is a means of exploring the upper digestive tract that is performed under sedation. It can also be performed without anesthesia and be a source of discomfort for the patient. We wonder if local anesthesia using lidocaine chlorhydrate gel associated with premedication with an anxiolytic is a credible alternative to upper GI endoscopy without sedation?

Methodology: Prospective analytical study from May 2022 to November 2022, conducted in the Hepato-Gastro-Enterology Department. It concerned all patients scheduled for gastroscopy. These patients were divided into two groups: The first group included patients who had received the gastroscopy without sedation and without premedication and the second group included patients who had received lidocaine chlorhydrate buccal gel at the time of the procedure with premedication by anxiolytic the day before the endoscopic examination.

Results: A total of 205 patients (110 in group 1 and 95 in group 2) were included in this study. The mean age was 45 years +/- 17.67 with a sex ratio of 0.95. Eighty-three patients (75.4%) in group 1 were anxious at the time of the endoscopy, compared with 6 (6.3%) in group 2. The examination lasted less than five minutes in 50 patients (45.4%) in group 1 and more than five minutes in 82 patients (86.3%) in group 2. After the gastroscopy was performed, 59 patients (62.1%) in the second group had no incidents, whereas all patients in the first group reported at least one incident. Tolerance was excellent in 39 patients (41%) of the second group, whereas none of the patients in the first group had an excellent tolerance. The acceptability of performing the gastroscopy was good in both groups (97.2% in group 1 and 93.4% in group 2). However, after the gastroscopy was performed, the acceptability dropped to 54.5% in the patients in the first group and only 45.4% of these patients recommended the performance of the gastroscopy under the same conditions to their next doctor. Whereas 81% of the patients in the second group accepted to repeat the examination under similar conditions and recommended it to their relatives.

There was a statistically significant difference in anxiety ($p < 0.001$), duration of the examination ($p < 0.001$), tolerance ($p < 0.001$), and incident occurrence ($p < 0.001$) between the two groups. The acceptability of repeating the examination under similar conditions and recommending it to the next patient was also statically significant ($p < 0.001$).

Conclusion: This study showed that patients who were candidates for upper gastrointestinal fibroscopy premedicated with anxiolytics associated with the use of lidocaine chlorhydrate gel had a better tolerance, acceptability and duration of the examination.

Keywords: Tolerance; Acceptability; Gastroscopy; Premedication; Lidocaine Gel

Introduction

Upper digestive endoscopy is an examination that allows the exploration of the mucosa of the upper digestive tract. It has a diagnostic and/or therapeutic purpose and is most often performed under anesthesia. Approximately 2.5 million upper gastrointestinal (GI) fibroscopy are performed per year in France, more than half of which are performed under general anesthesia [1]. However, the shortage of anaesthetists in endoscopy rooms in developing countries encourages us to perform upper gastrointestinal fibroscopy without sedation. Unfortunately, this generates an anxiety-inducing climate and a source of discomfort for the patient, thus penalizing the quality of the exploration [2]. The examination can be dreaded and badly experienced by the patients because of its unpleasantness. We consider the possibility of using local anesthesia as lidocaine chlorhydrate gel associated with premedication as an alternative to reduce the anxiety during upper GI endoscopy without anesthesia.

Materials and Methods

This is a prospective and analytical study conducted from May 2022 to November 2022, at the Hepato-Gastro-Enterology Department of the Ibn Rochd University Hospital of Casablanca, Morocco. All patients who were candidates for upper GI fibroscopy were included. After being informed about the course of the examination, the patients were divided into two groups: the first group included the patients who had received the gastroscopy without sedation and without premedication and the second, the patients who had received lidocaine chlorhydrate buccal gel at the time of the procedure with premedication by anxiolytic the day before the endoscopic examination. The variables studied were: epidemiological characteristics, patient comorbidities, anxiety, duration of the examination, tolerance, incidents and acceptability.

Tolerance was defined as the patient's ability to tolerate the examination and was judged as follows:

- Excellent: If the patient remains calm from the beginning to the end of the examination;
- Good: If the patient is agitated at the beginning but remains calm thereafter until the end of the examination;
- Average: If the patient is very agitated at the beginning and remains less agitated until the end of the examination;
- Poor: If the patient is agitated from the beginning to the end of the examination, requiring the examination to be shortened.

Acceptability was defined as the patient's ability to accept the examination without insistence and their willingness to repeat the examination if necessary or to recommend it to their next patient under the same conditions. It was considered as:

- Good: If the patient easily accepts to perform the examination after an enlightened explanation of the procedure and willingly accepts to repeat the examination or recommend it to his or her next one.
- Poor: If the patient accepts to perform the examination after insistence and refuses to do it again or to recommend it to the next patient.

The data collected were entered and analyzed by SPSS 20 (Statistical Package for the Social Sciences) software. Statistical correlation was sought between the variables using the Student's Test and Chi-square. It was considered significant if $p \leq 0.05$.

Results

A total of 205 patients (110 in group 1 and 95 in group 2) were included in this study. The mean age was 45 years +/- 17.67 with a sex ratio of 0.95. The epidemiological characteristics and comorbidities of the patients are grouped in table 1.

Of the patients in group 1, 83 (75.4%) were anxious at the time of the endoscopy compared with 6 in group 2 (6.3%). The gastroscopy was performed by physicians in gastroenterology training in 80 patients (72.7%) in group 1 and 76 (80%) in group 2. The examination lasted less than five minutes in 50 patients (45.4%) in group 1 and more than five minutes in 82 patients in group 2 (86.3%).

Variables	G1		G 2		Total		p
	n	%	n	%	N	%	
Age							
17 - 47 years	62	56,4	56	58,9	56	27,3	
47 - 77 years	47	42,7	38	40,0	42	20,5	p = 0.99
> 77 years	1	00,9	1	01,1	40	19,5	
Sex							
Male	54	49	46	48,4	100	48,8	
Female	56	51	49	51,6	105	51,2	p = 0.92
Comorbidity							
HTA	10	9,1	7	7,4	17	8,3	
Obesity	0	0	1	1,1	1	0,5	
Diabetes	3	2,7	1	1,1	4	1,9	
Heart disease	6	5,5	10	10,5	16	7,8	
CKD	1	0,9	1	1,1	2	1,0	
Lung disease	3	2,7	1	1,1	4	1,9	
Cirrhosis	11	10,0	3	3,6	14	6,8	
Neoplastic pathology	3	2,7	0	0	3	1,4	
BPH	2	1,8	0	0	2	1,0	
Pancreatopathy	1	0,9	0	0	1	0,5	
None	70	63,7	71	74,1	141	68,8	

Table 1: Epidemiological characteristics and comorbidities of patients.

After the gastroscopy was performed, 59 patients (62.1%) of the second group had no incident, whereas all patients of the first group reported at least one incident. The sensation of high heart rate, nausea and choking were the most common complaints in 36.3%, 35.5% and 22.7% of the patients in the first group respectively, and nausea was the most common complaint in 18.9% of the patients in the second group. No effects of lidocaine chlorhydrate buccal gel were reported by patients in group 2 (Table 2).

Variable	G1		G2		Total		P
	n	%	n	%	n	%	
Incidents							
Choking sensation	25	22,7	05	5,3	30	14,6	
Feeling of giddiness	40	36,3	08	8,4	48	23,4	
Nausea	39	35,5	18	18,9	57	28,7	
Vomiting	00	00	03	3,1	02	1,0	
Feeling of giddiness + choking	06	5,5	02	2,1	08	6,8	p < 0,001
None	00	00	59	62,1	59	25,0	
Effect of Xylocaine							
Bitter taste	-	-	00	00	00	00	
Nausea	-	-	00	00	00	00	
Vomiting	-	-	00	00	00	00	
Epigastralgia	-	-	00	00	00	00	
Discomfort	-	-	00	00	00	00	
None	-	-	95	100	95	100	

Table 2: Distribution of patients according to incidents.

In the second group, tolerance was excellent in 39 patients (41%) and poor in 8 patients (8.4%). In the first group, no patient had an excellent tolerance and 41 patients (37.3%) had a poor tolerance.

The acceptability of performing gastroscopy was good in both groups (97.2% in group 1 and 93.4% in group 2). After the gastroscopy was performed, only 54.5% of the patients in group 1 versus 81% of the patients in group 2 agreed to repeat the examination. Among the patients in group 1, 45.4% recommended the performance of the gastroscopy to their next patient, against 81% of the patients in group 2.

Analytically, there was a statistically significant difference in anxiety ($p < 0.001$), duration of the examination ($p < 0.001$), tolerance ($p < 0.001$) and occurrence of incidents ($p < 0.001$) between the two groups, but no statistically significant difference was found for age ($p = 0.99$), sex ($p = 0.92$) and operator grade ($p = 0.22$). The acceptability of performing the endoscopic examination was not statistically significant ($p = 0.21$) between the two groups, whereas the acceptability of repeating the endoscopic procedure under the same conditions ($p < 0.001$) and of recommending it to a relative ($p < 0.001$) were statistically significant between the two groups.

Variable	G1		G2		Total		p
	n	%	n	%	n	%	
Anxiety							
Anxious patient	83	75,4	6	6,3	89	43,4	
Non-anxious patient	27	24,6	89	93,7	116	56,6	P < 0,001
Tolerance							
Excellent	0	0	39	41,05	39	19,02	
Good	17	15,45	31	32,63	48	23,41	
Average	52	47,27	17	17,89	69	33,65	P < 0,001
Poor	41	37,28	08	08,43	49	23,92	
Examination time							
< 5 minutes	50	45,4	13	13,7	063	30,7	
5 - 10 minutes	53	48,1	48	50,5	101	49,3	P < 0,001
> 10 minutes	07	6,5	34	35,8	041	20	
Acceptability							
Good	107	97	89	93,4	196	95,6	
Poor	03	2,8	6	6,6	09	4,4	p = 0.21
Exam to be repeated							
Accepted	60	55,4	77	81,1	117	57,1	
Refused	50	45,4	18	18,9	68	42,9	P < 0,001
Exam to be recommended							
Accepted	50	45,4	77	81,1	127	61,9	
Refused	60	54,5	18	18,9	78	38,1	P < 0,001
Operator							
Gastro Doctor	80	72,7	76	80	156	76,1	
Professor	30	27,3	19	20	49	23,9	p = 0.22

Table 3: Distribution of patients according to anxiety, tolerance, duration of the examination and acceptability.

Discussion

Performing gastroscopy under sedation requires close monitoring of patients during and after the procedure. It has a low risk of about 0.5% and minor incidents of 10-20% related to anesthesia [13,14]. Gastroscopy without sedation has nowadays become a diagnostic pro-

cedure that avoids the risk of anesthesia. Unfortunately, it can be unpleasant and penalizes the quality of this examination. In this study, we evaluate the impact of local anesthesia with lidocaine chlorhydrate gel preceded by a premedication on the tolerance and acceptability of gastroscopy.

The study involved 205 patients who are, on average, young adults of 45 years of age, with a slight female predominance. This average age can be explained by the fact that our service deals with adult patients and not pediatric patients.

We assessed the anxiety between the group of patients who received premedication with anxiolytics the day before the examination associated with lidocaine gel before the procedure (group 2) and the group of patients without any premedication or local anesthesia (group 1). Patients in the first group were more anxious than those in the second group (75.4% VS 6.3%), with a statistically significant difference ($p < 0.001$). In the study by Sombié, *et al.* [5], concerning the evaluation of the tolerance and acceptability of upper gastrointestinal endoscopy in 350 patients premedicated to diazepam 5 mg IVD or clonazepam 2.5 mg per os and viscous lidocaine in oral gel, the rate of anxiety was 79.4%. This rate reported by this study is much higher than that of our cohort (79.4% VS 6.3%) and can be explained by the use of anxiolytics the day before the examination in our patients. Other African authors [6] reported anxiety rates of 91% in patients undergoing fibroscopy without sedation. This rate is higher than that reported in our study (91% VS 75.4%). Thus, anxiety may compromise the tolerance of exploration without sedation. It can be reduced by premedication with anxiolytics the day before the examination.

The evaluation of tolerance between the two groups showed excellent tolerance in 73.68% of patients in the second group and poor tolerance in 8.4% of patients in the same group. No patient in the first group reported excellent tolerance and 37.3% had poor tolerance. This evaluation was statistically significant ($p < 0.001$) between the two groups. The tolerance of our patients (73.6%) performing endoscopy under local anesthesia after premedication is superposable to that of the studies by Amourreti [8] in France (86%) and Ibara [4] in Congo (85.7%). It could be emphasized that local anesthesia preceded by premedication would improve tolerance.

The endoscopic examination lasted more than five minutes in 86.3% of the patients in the second group and less than five minutes in 45.4% of the patients in the first group with a statistically significant difference ($p < 0.001$) between the two groups. In the study by Sombié [5], the duration of the endoscopic examination was more than five minutes in 3.7% of patients. This rate is much lower than in our study (3.7% VS 86.3%). In another study conducted by Séhonou [3], the rate of patients who performed the fibroscopy without sedation in less than five minutes was 96%. This result was higher than ours (96% VS 45.4%). According to our result, we can affirm that the excellent tolerance of gastroscopy under local anaesthesia preceded by premedication would increase the exploration time and probably improve the diagnostic performance of this examination.

Gastroscopy without sedation is more often feared because of its unpleasant character. Nausea, vomiting and the sensation of suffocation during the procedure influence its acceptability [8]. After the examination, the most frequent incidents in our study were nausea and a feeling of high heart rate in 35.5% and 36.3% of patients performing the gastroscopy without sedation respectively, whereas they were only 18.9% and 8.4% in patients performing the examination under local anaesthesia with a statistically significant difference ($p < 0.001$) between the two groups. In the study by Claude [7] nausea was also reported in patients who underwent gastroscopy without anesthesia. Our result would demonstrate that local anaesthesia would minimize the nausea reflex and would make the examination less unpleasant.

The acceptability of performing the gastroscopy was good in 97.2% of the patients in the first group and 93.4% of the patients in the second group. This result was described by other African authors [4,7] with rates varying from 91 to 97.7%. This acceptability rate is due to the quality of the information transmitted to the patient by our prescribing physicians. Indeed, the French Society of Digestive Endoscopy recommends the use of an information sheet which should be explained and given to the patient during the consultation before the gastroscopy is performed [9,10]. It is advisable to inform the patient the day before the examination about the interest, preparation,

procedure and possible complications [11,12]. However, after the gastroscopy was performed, acceptability dropped to 54.5% in patients performing the endoscopy without sedation and only 45.4% of them recommended the performance of the gastroscopy under the same conditions to their next patient. Whereas 81% of the patients in the second group accepted to repeat the examination under similar conditions and recommended it to their relatives. The acceptability of redoing the endoscopic procedure under the same conditions and recommending it to their relatives were statistically significant ($p < 0.001$) between the two groups. This result is close to that of Raymond [6] who reported that 84.5% of the premedicated patients would like to perform the digestive fibroscopy under the same conditions. These results show the impact of premedication and local anaesthesia on the good acceptability of this examination by the patients.

This original work is a comparative study which contributes to evaluate the impact of local anaesthesia preceded by premedication on the acceptability and tolerance of gastroscopy by patients. Its limitation could be seen in the fact that the study was conducted only on diagnostic and not therapeutic gastroscopy and also in the small size of our sample.

Conclusion

The experience of our department has shown that patients premedicated with anxiolytic associated with local anesthesia had better tolerance, acceptability and duration of examination. Therefore, we believe that premedication and local anesthesia would be an encouraging alternative to help anxious patients and patients with intense gag reflexes to better tolerate and accept gastroscopy. We suggest further multicentric studies to elucidate in a better way this challenging issue.

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