

Protocolo fast track (“rápida implementación”) disminuye el tiempo de estadía hospitalaria, y el tiempo de inicio de la alimentación por vía bucal, en el paciente sometido a cirugía colorectal electiva

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INTRODUCTION

Despite the scientific evidence for Fast-track protocols in colorectal surgery, it is difficult to impose it because many surgeons still have cultural barriers, such as fear of change. That is why the question remains as to whether the colorectal surgery is best according to the principles of “enhanced recovery after surgery” or traditional care and how to improve the focus and Fast-track deployment.

Despite these advances patients undergoing elective colorectal surgery continue to suffer high morbidity and mortality, with longer in-hospital stays after surgery (1).

Preoperative fasting, dehydration caused by intensive preparation of the colon, surgical trauma, the use of drains, nasogastric tube, an excessively long fluid and the use of opioid analgesics made the patient keep bedridden for days, more edema of the intestinal walls by the absence of oral feeding and therefore the increased risk of complication (2).

The complication rate of a patient undergoing conventional colorectal surgery preparation ranges from 15 to 20%, and increased hospital stay six and ten days (3).

Kehlet and colleagues first described a program of rapid postoperative recovery, called “Enhanced Recovery After Surgery” (ERAS), which it is commonly called “Fast track”. In their study they conducted a perioperative protocol that was able to reduce the average hospital stay up to 4 days, the metabolic response to trauma, complications and costs of care as well as accelerating the recovery of patients without compromising their safety (4).

Currently there are multiple Fast-track protocols, but in general these focus on pre care, trans and postoperative patient. The contributions of these protocols are based on the inclusion of new anesthetic drugs, restriction transoperative liquids, disuse of bowel preparation and prolonged fasting, the limitation on the use of drains and nasogastric and urinary catheters, patient recovery off bed, and the gradual onset of adequate diets (5,6).

The aim of this study is to compare the Fast-track with conventional bowel preparation in patients undergoing elective colorectal surgery.

METHODS

Transversal, retrospective study, conducted in patients from digestive tract surgery in a Third Level Medical Facility. Review of medical records was conducted during January 2012 to August 2015. Patients of both genders

were included under the ASA I, II and III classification, who underwent elective colorectal surgery (left colectomy) for benign disease that included polyposis, diverticular disease, inflammatory diseases of the colon, megacolon, an anastomosis, by open approach. Diabetic patients and patients who had some kind of stoma before surgery were excluded.

A total of 86 patients divided into two groups of 43 patients each were included.

Group A: conventional care group (GCC).

They were given routine information on colorectal surgery. Patients were admitted the day before surgery, were managed with diet without waste and liquid from 48 hours before surgery, and suspension orally eight hours before surgery; bowel preparation was performed with polyethylene glycol and 3 bulking enemas administered every 4 hours before surgery, 4 mg of ondansetron was administered. All the patients were managed with balanced general anesthesia, placed nasogastric tube which was withdrawn when restarting peristalsis with channeling at least one gas from the rectum, transurethral catheter type Foley continued until the removal of IV solutions. The onset was orally at the time of restoration of peristalsis, mobilization of patients was according to the surgeon's discretion, analgesia was given with NSAIDs metamizol type and intravenous ketorolac. Antibiotics agreed to the surgeon's discretion.

Group B: Fast-track group (GFT).

Patients were informed about the procedure carried out for surgery: German Quality Assurance Program Fast-track II: Preoperative = informed consent, without bowel preparation, intravenous fluids 2 hours before surgery, with ondansetron antiemetic prophylaxis, dexamethasone 4 mg and 8 mg

intravenous, preoperative analgesia; Intraoperative = total intravenous anesthesia with high epidural T6 - T8, fluid restriction to 3000 ml. The incision was average, was used transverse when possible. Removal of the nasogastric tube was at the end of anesthesia and placed intracavity drains. Analgesia was initiated with NSAIDs 20 minutes before the end of anesthesia; postoperative = the first day of surgery nonopioid analgesic used, postoperative liquids were limited to 500 ml. It began with clear liquid diet at 6 hours up to 1500 ml. 500 ml intravenous colloids were administered if they had orthostatic changes, ambulation started as soon as possible and stitches were removed after 8 days after surgery (7,8).

Hospital discharge criteria were: soft diet tolerance, channeling of gases through rectum, pain controlled by oral analgesics and acceptance of the registration.

The variables included were age, gender, weight, height, starting orally feeding in hours, days of hospital stay, channeling gases by rectum, procedural complications by itself, reoperations, patient status at discharge and mortality per month.

Statistical analysis: descriptive statistics were used, frequencies for qualitative variables, for ordinal average and standard deviation. The association was demonstrated with X² for qualitative variables, Student t test for quantitative variables.

RESULTS

There were a total of 86 patients, 43 (50%) in group A (GCC) and 43 (50%) in group B (GFT).

In group A, a frequency of 29 males (67.4%) and 14 females (32.6%) was observed, while the B group showed a frequency of 23 males (53.5%) and 20 females (46.5%).

The average age was 58.93 + 16.88 for GCC and the GFT 58.34 + 14.79 years without statistically significant difference ($p = 0.867$); the average weight for the GCC was 67 + 12.23 kg and 69.14 + 13.46 GFT Kg no significant difference ($p = 0.482$); the average size for the GCC group was 163.02 + 7.99 cm and the GFT 160.93 + 09.03 cm without statistically significant difference, $p = 0.283$. Between both groups of patients, there were statistically significant differences between the onset of oral and hospital stay days, $p = 0.000$ for both differences. (Table 1)

At 24 hours post surgery pain measurement by the VAS scale in the GCC was 3.42 + 1.139 and 2.86 + TFG 0941 of, $p = 0.001$.

In the GCC ($n = 43$), 28 (65.1%) had no complications, 15 (34.9%) had the following complications: 5 (11.6%) wound dehiscence, 4 (9.3%) eventration, 2 (4.7%) bleeding with ileus, 2 (4.7%) postoperative ileus and 2 (4.7%) enterocutaneous fistulas. Rehospitalization rate due directly derived from surgery was 34.88% for this group.

In GFT ($n = 43$), 33 (76.7%) had no complications, 10 (23.3%) had the following complications: 3 (7%) bleeding, 3 (7%) seroma, 1 (2.3%) anastomosis dehiscence 1 (2.3%) pulmonary thromboembolism, 1 (2.3%) abscess and 1 (2.3%) enterocutaneous fistula, no statistically significant differences between groups $p = 0.723$, X2. Rehospitalization rate due directly derived from surgery was 23.25% for this group.

As for reoperation in the GCC ($n = 43$), they were carried out 11 (25.6%) reoperations: 7 (16.3%) surgical toilets with closure wall, two (4.7%) laparotomy with hemostasis and 2 (4.7%) restoration of intestinal transit; while the GFT ($n = 43$), 4 (9.3%) had some form of reoperation. Reoperations performed in this group were: 1 (2.3%) surgical toilet and wall closure, 1 (2.3%) left hemicolectomy, 1 (2.3%) remodeling

colostomy and 1 (2.3%) placing of a Bogota bag without statistically significant difference, $p > 0.05$, X2.

Complications presented in both patient groups according to the classification of Dindo-Clavien are shown in the following table. (Table 2)

There were no statistically significant differences between complications and reoperations performed in both groups, $p > 0.05$, X2. (Table 3)

There was also no statistically significant differences between time to first flatus channeling in both groups, $p > 0.05$. (Table 4)

There were no deaths in both groups of patients.

DISCUSSION

At present times, the main goals of surgery are the effectiveness and safety, as well as some situations that are changing fast-pacely. The Fast-Track concept is based on principles of evidence-based medicine, surgical stress reduction and pain management, affecting the course of the patient, their environment preoperatively, intraoperatively and throughout the subsequent evolution. Kehlet proposed a multimodal program that must surgeons, anesthetists, physiotherapists, and nurses participate as a teamwork in order to improve recovery of surgical patients and reduce complications (9), although to date it is unknown which aspect of the Fast-track is favoring a greater degree with the best course of patients with colorectal surgery (10).

With respect to age, weight and height of patients, there were not statistically significant differences for both groups of patients included ($p > 0.05$).

The average age of patients was 58.93 for the GCC and 58.34 for GFT. These average ages are lower than described by some authors that reported an average of 66 and 68.7 years for patients with Fast-track (9.10).

TABLES

Table 1: Test samples related, mean difference between both GCC and GFT groups for age, weight, height, onset of oral feeding and days of hospital stay.

	Media	t	p
Age - Age	58.93	0.168	0.867
	58.34		
Weight - Weight	67.00	-0,709	0.482
	69.14		
Height - Height	163.02	1,087	0.283
	160.93		
Beginning PO	124.83	9,223	0,000
	27.86		
HSL	17.27	3,988	0,000
	5.67		

Abbreviations:

Age in years, weight in kilograms, height in centimeters, beginning PO =start of oral feeding (hours), HSL=hospital stay length, t=t statistics, p= probability.

Table 2: Complications presented according to Dindo-Clavien classification

		Dindo-Clavien classification (Grade)					Total
		I	II	III	IV	V	
Group	GCC	0	9	6	0	0	10
	GFT	0	5	5	0	0	15

= Group a

Abbreviations:

GCC = conventional surgery group, GFT = Fast-Track group.

Table 3: Complications presented in both patient groups (Chi square).

		GFT		Total	p
		Without complications	complications		
GCC	Without complications	twenty	8	28	0.260
	complications	13	2	fifteen	
Total		33	10	43	

Abbreviations:

GCC = conventional surgery group, GFT = Fast-Track group, p = probability

Table 4: Reinterventions presented in both patient groups (Chi square).

		GFT			p
		No reoperations	with reoperation	Total	
GCC	No reoperations	28	4	32	0.218
	with reoperations	eleven	0	eleven	
Total		39	4	43	

Abbreviations: GCC = conventional surgery group, GFT = Fast-Track group, p = probability.

With respect to the preoperative score of the American Society of Anesthesiologists (ASA) grades I, II and III were included, because these patients can be brought safely to elective colorectal surgery (10). In recent years it has been challenged the traditional management of patients undergoing colorectal surgery due to better understanding of physiological, biochemical and intensive care aspects. Thus the basic pathogenesis for the development of postoperative morbidity is given by complications arising from anesthesia, the surgical technique, response to surgical stress which induces an increase in demand for endocrine organ systems and biochemical changes (5,10, 11,12,13).

The average onset time of the oral feeding (in hours) was much lower in the GFT compared with GCC, with statistically significant differences $p = 0.000$. We should take into consideration that all hospitalized patients with prolonged fasting show discomfort, which could be resolved with the GFT.

The average hospital stay for the GFT was 5.67 days, similar to that reported by L. Espindo who mentions that 93% of patients with colorectal surgery handled by Fast-track had a hospital stay between 4 and 5 days (10). Basse et al compared a traditional protocol against one Fast-track which included 260 consecutive patients operated for colorectal surgery and concluded that the time to first defecation time, hospital stay length, and morbidity were significantly reduced with the Fast-track protocol, with no statistically significant differences in the rate of rehospitalization (14,15).

In this series the average VAS assessment of pain at the GFT was $2.86 + 0.941$ to 24 hours of patients visited after surgery. This evaluation is slightly higher than that presented by Espindo L, who refers to average less than 2 VAS pain during hospitalization of patients with colorectal pathology op-

erated with Fast-track. Also a fact that is worth mentioning is that in this series the differences between pain presented in the GCC and GFT are significant $p = 0.001$.

Concerning the complications of surgery presented by the patients, there were no statistically significant differences between groups $p = 0.260$. According to Dindo-Clavien classification, all the complications of patients in both groups were in grades II and III. The complications of surgery were GFT in 23.25% of patients, higher than that presented by Espindo L (17.5%) for patients undergoing colorectal surgery Fast Track. Other authors conclude that Fast-track protocols for colorectal surgery are safe, do not increase mortality or rehospitalization rates but refer the need for more evidence (14,15,16).

As for reoperated patients, these were higher in the GCC (25.6%) compared to the GFT (9.3%), but with no statistically significant difference ($p = 0.218$). Some authors report the same or similar percentages in reoperations in patients undergoing colorectal surgery with Fast Track (9,17,18,19,20).

Currently the consensus on the management of colorectal surgery is leaning toward using Fast-track protocols, but when complications occur in patients, they can be as severe as patients with conventional management protocols. For best results, it is required the preparation of the multidisciplinary team (anesthesia, nursing, surgeons) involved in the care of patients with colorectal disease operated with Fast-track protocols, making a greater adherence to the guidelines and prospective studies to compare these groups of patients with the same surgical procedures.

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RESUMEN

Introducción: el protocolo "fast track" (rápida implementación) ha revolucionado a la cirugía colorectal. Algunos cirujanos aún efectúan la preparación preoperatoria

para los pacientes que serán sometidos a cirugía colorectal. El propósito de este escrito es el de comparar los resultados entre el protocolo "fast track" y la cirugía convencional en la preparación de los pacientes sometidos a cirugía colorectal por afecciones benignas.

Métodos: desde enero 2012 hasta agosto 2015, los pacientes operados por cirugía colorectal debido a afecciones benignas se incluyeron en el estudio. El grupo de comparación consistió en pacientes con cirugía colónica mayor con cuidado convencional y el "fast track".

Resultados: hubo 86 pacientes en total, 43 para cada grupo. Ambos grupos eran similares. Los pacientes con cuidado convencional tuvieron una estadía hospitalaria mayor y de inicio de la alimentación por boca comparada con los pacientes del protocolo "fast track", $p = 0.000$ para ambas diferencias.

Las complicaciones postoperatorias y las reoperaciones fueron similares en

ambos grupos, sin ninguna diferencia significativa, $p > 0.05$. No hubo fallecimientos en los dos grupos.

Conclusión: el protocolo "fast track" es efectivo en la cirugía colorectal electiva porque disminuye el tiempo del comienzo de la alimentación por boca y el de la estadía hospitalaria en los pacientes, sin comprometer la seguridad.

SUMMARY

Introduction: The Fast-track protocol has revolutionized colorectal surgery. Some surgeons still perform preoperative preparation for patients undergoing colorectal surgery. The aim of this paper is to compare the results between the Fast-track protocol and conventional surgery in preparing patients undergoing colorectal surgery for benign disease.

Methods: From January 2012 to August 2015, the patients operated for colorectal surgery for benign diseases were included. The comparison group consisted of patients with major colon surgery with conventional care and Fast-track.

Results: There were 86 patients in total, 43 in each group. Both groups were similar. Patients with conventional care had higher hospital stay and start of oral feeding compared to patients in Fast-track protocol, $p = 0.000$ for both differences. Postoperative complications and reoperations were similar in both groups, with no significant difference, $p > 0.05$. *There were no deaths in both groups.*

Conclusion: *Fast-track protocol is effective in elective colorectal surgery because it decreases the start time of the oral feeding and the hospital stay of patients without compromising safety.*

Keywords: *colorectal surgery; Fast-track; hospital stay.*