

## Investigation of the Use of Opioids in Bariatric Surgery

Dr. Bashar Ghanim Ameen Al-Dabbagh<sup>1</sup>, Dr. Yahya Adnan Qassab<sup>2</sup> and Dr. Haider Ali Ibraheem Ghazalat<sup>3</sup>

<sup>1</sup>M.B.Ch.B. \ HIGH DIPLOMA \ (Anesthetist) Ministry of Health, Department of Health Nineveh, AL-Mosul General Hospital, Nineveh, Iraq

<sup>2</sup>M.B.Ch.B. \ D.A. \ (Anesthetist) Ministry of Health, Baghdad Medical office Al-Karkh, Al- Karkh General Hospital, Baghdad, Iraq

<sup>3</sup>M.B.Ch.B. \ D.A. \ F.I.C.M.S. \ (Anesthetist) Ministry of Health, Baghdad Medical office Al-Karkh, Al-Yarmouk Teaching Hospital, Baghdad, Iraq

**Abstract:** This study aims to know the Investigation of the use of opioids in bariatric surgery, which was conducted in different hospitals in Iraq, where a cross-sectional study was conducted on a certain number of patients who underwent bariatric surgery, where 200 patients were collected and distributed into three groups. The first group the year before bariatric surgery, which included 100 patients, and the second group had some opioid use. This included 50 patients, and in the third group (Chronic), which also included 50 patients in this cohort of patients who underwent bariatric surgery, there was greater chronic use of opioids after surgery compared with before. In general, opioids are essential for pain control after surgery due to their potent effect. But its side effects can be significant and include nausea, vomiting, constipation, urinary retention, drowsiness, impaired ability to think, and impaired respiratory function.

**Keywords:** Chronic, opioids, postoperative, anaesthesia, respiratory, BMI, bariatric.

## INTRODUCTION

Most people experience postoperative pain that requires the use of strong opioid painkillers [Hooper, M.M. *et al.*, 2007; Gribsholt, S.B. *et al.*, 2017]. These medications are associated with a number of side effects, including respiratory depression, slow heart rate, and low blood pressure, as well as vomiting, drowsiness, itching, and constipation. Reducing the number of opioids can reduce these side effects and improve the patient's condition. Compared with the introduction of pain relievers later [Colquitt, J.L. *et al.*, 2014; King, W.C. *et al.*, 2016; Raoof, M. *et al.*, 2015], the use of analgesics before the first incision during surgery may reduce pain sensitivity and thus reduce postoperative pain. We wanted to know whether administering opioids before surgery was more effective than giving the same analgesics after surgery [Jakobsen, G.S. *et al.*, 2018; King, W.C. *et al.*, 2017; Raebel, M.A. *et al.*, 2014; Raebel, M.A. *et al.*, 2013].

According to the main stages of patient management, this project is divided into three parts: the preoperative period, the provision of surgery and anaesthesia, and the postoperative period [Lloret-Linares, C. *et al.*, 2014; Klockhoff, H. *et al.*, 2002; Ivezaj, V. *et al.*, 2014; Reslan, S. *et al.*, 2014].

The safe implementation and provision of rapid rehabilitation protocols can only be achieved through the coordinated work of the surgeons and the anaesthesia team since many of the recommendations made in the project relate more

to anesthesia support for the operation and patient support [Saules, K.K. *et al.*, 2010; Coblijn, U.K. *et al.*, 2015; 16. Hedenbro, J.L. *et al.*, 2015].

In obese patients, opioids suppress respiration and also relax upper respiratory muscles, exacerbating existing airway obstruction in these patients [Wallerstedt, S.M. *et al.*, 2016; Svendsen, K. *et al.*, 2011].

Intraoperative administration of opioids increases pain in the postoperative period and increases the need for analgesics, while the intensity of postoperative pain is directly proportional to the dose of opioids used during anesthesia [Mercadante, S. *et al.*, 2011].

Opiates have a clearly emetic effect, increasing the frequency of episodes of nausea and vomiting in the postoperative period, while the intensity of the emetic effect is directly proportional to the administered dose [Jylli, L. *et al.*, 2004].

The use of anesthesia without the use of opioids in bariatric surgery has been shown to be effective in randomized trials.

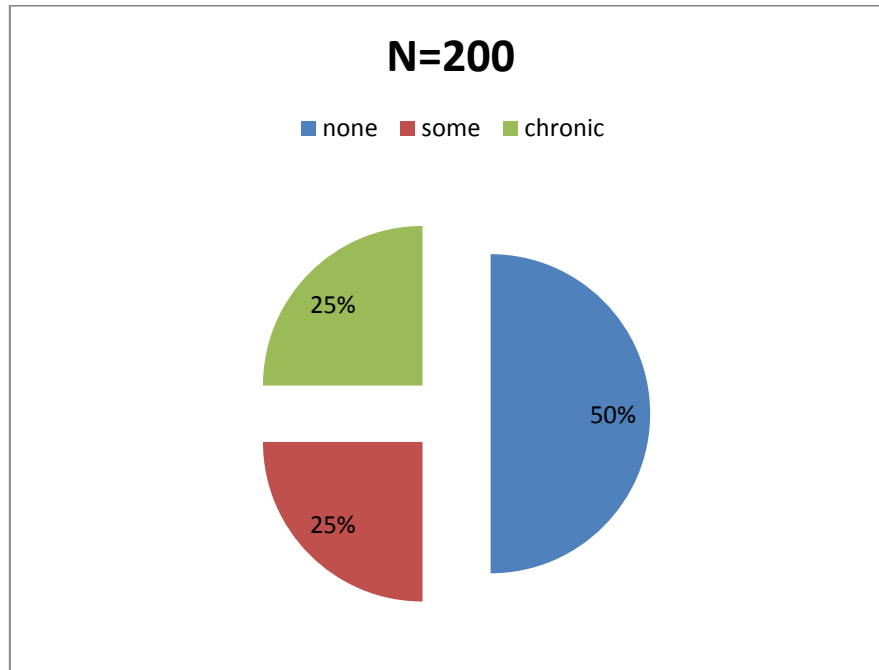
It is necessary to seek to reduce the dose of opioids during anesthesia during bariatric surgery or to refuse to use them if the anesthesia team is adequately prepared.

## MATERIAL AND METHOD

### Patient Sample

This study was conducted in different hospitals in Iraq, where a cross-sectional study was conducted on a certain number of patients who underwent bariatric surgery, where 200 patients were collected and distributed into three groups.

The first group who before bariatric surgery, which included 100 patients, and the second group had some opioid use. This included 50 patients and the third group (Chronic) which also included 50 patients, as shown in figure 1.



**Figure 1:** distribution of patient according to opioid use

### Study Design

Bariatric patients represent a unique surgical group and present significant challenges—relatively safe and effective pain relief after surgery. Recent studies show that the frequency of long-term opioid use in the first year after surgery is higher among obese patients.

Although bariatric surgery is considered an important treatment for obesity and improves many comorbidities, including musculoskeletal pain, it is interesting to note that this has not led to a reduction in the use of opioid analgesics. Perhaps as a result of unique psychological, social and physiological factors that affect obese patients.

Chronic opioid use is a national health crisis resulting from the overprescribing of surgical pain relievers. Despite the opioid epidemic, opioid analgesics remain the primary treatment for acute postoperative pain. More than 80% of patients

receive opioid analgesics even after low-risk surgeries.

Poorly controlled postoperative pain and short-term opioid use are both associated with the development of chronic pain after surgery and increase the risk of subsequent opioid use. Thus, surgery patients are at risk for poor health-related quality of life (HRQoL) and opioid-related side effects.

### Study Period

Cooperation was conducted with the relevant committees for the purpose of obtaining the required approvals and permits and adhering to work ethics. The study period was a full year from the date of the surgery to the analysis of results and demographic information of patients and the study period was from 22-9-2019 to 12-10-2020.

### Aim of Research

This study aims to know Investigation of the use of opioids in bariatric surgery

## RESULTS

**Table 1:** distribution of patients according to age

Age	G1 before bariatric surgery	G2 SOME	G3 Chronic	P VALUE
25-29	20	9	5	0.044
30-34	35	13	16	0.09
35-39	25	10	11	0.06
40-44	20	12	11	0.67
45-50	10	8	7	0.83

**Table 2:** distribution of patients according to sex

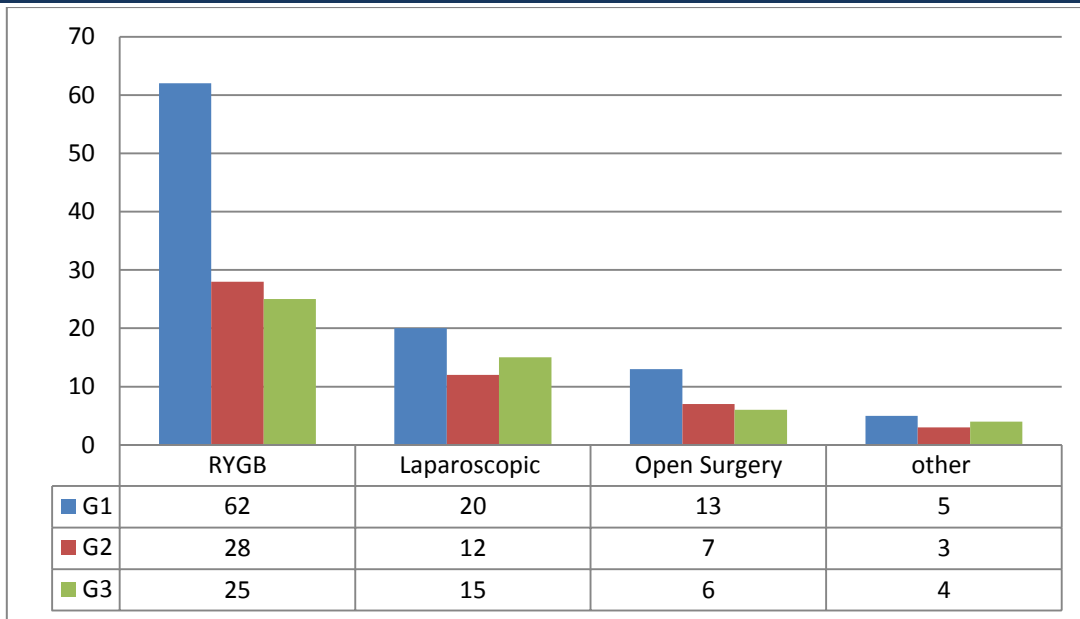
Age	G1 NO opioid		P VALUE	G2 SOME		P VALUE	G3 Chronic		P VALUE
	m	f		m	f		m	f	
25-29	7	13	0.02	4	5	0.9	2	3	0.99
30-34	10	25	0.01	4	9	0.01	4	12	0.03
35-39	15	10	0.09	2	8	0.005	5	6	0.9
40-44	12	8	0.77	3	9	0.002	3	8	0.05
45-50	3	7	0.033	4	4	0.0	4	3	0.99

**Table 3:** Distribution of patients according to BMI

Age	median Before surgery		
	g1	g2	g3
25-29	35-55	30-49	30-45
30-34	39-50	37-50	40-49
35-39	30-40	40-48	43-54
40-44	47-58	40-50	50-61
45-50	52-59	49-59	51-59

**Table 4:** Clinical Characteristics of patients

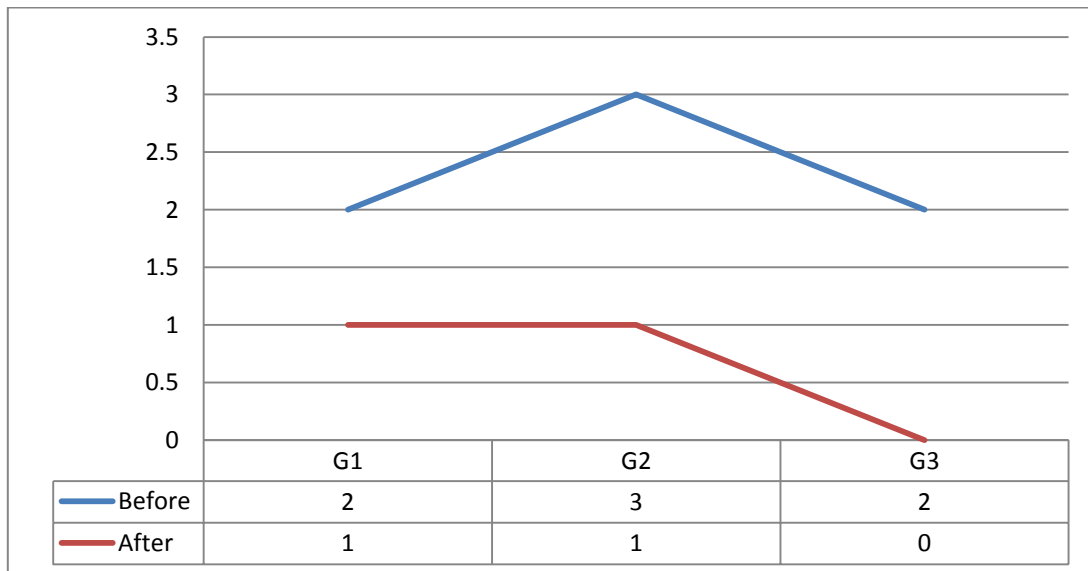
Parameter	G1	G2	G3	P VALUE
comorbidities				
hypertension	22	10	9	0.67
diabetes	50	30	25	0.055
heart disease	10	5	10	0.38
Others	18	5	6	0.022
Smoking				
Yes	30	19	15	0.01
No	70	31	35	0.0033
Education				
Primary	10	5	3	0.92
Secondary	30	12	15	0.082
College	50	30	18	0.01
High	10	3	14	0.55



**Figure 2:** outcomes result of Type of surgery

**Figure 3:** results of Body mass index after surgery

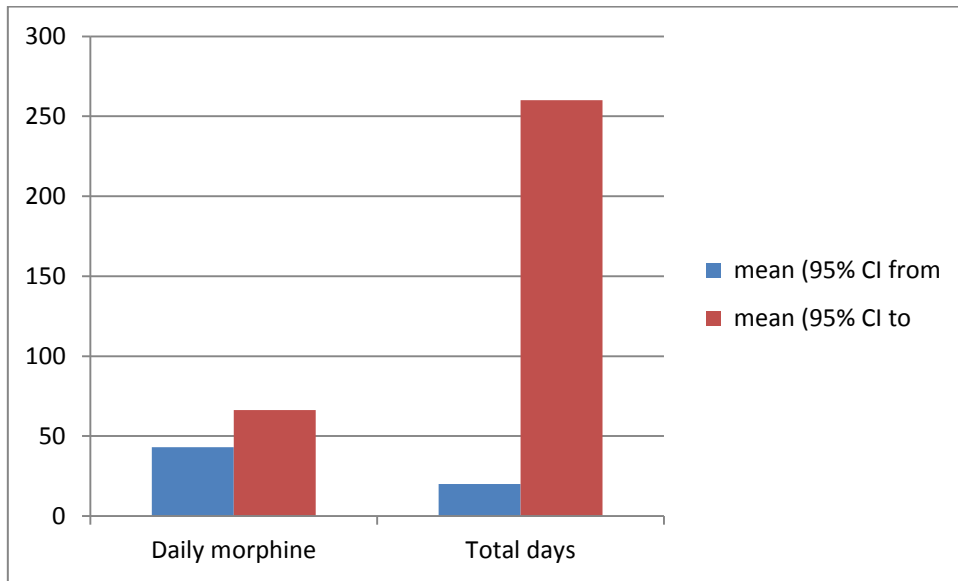
Age	median Before surgery		
	g1	g2	g3
25-29	29-40	28-40	24-33
30-34	27-41	25-37	28-34
35-39	24-30	31-38	32-42
40-44	30-40	29-39	31-43
45-50	33-41	26-41	35-41



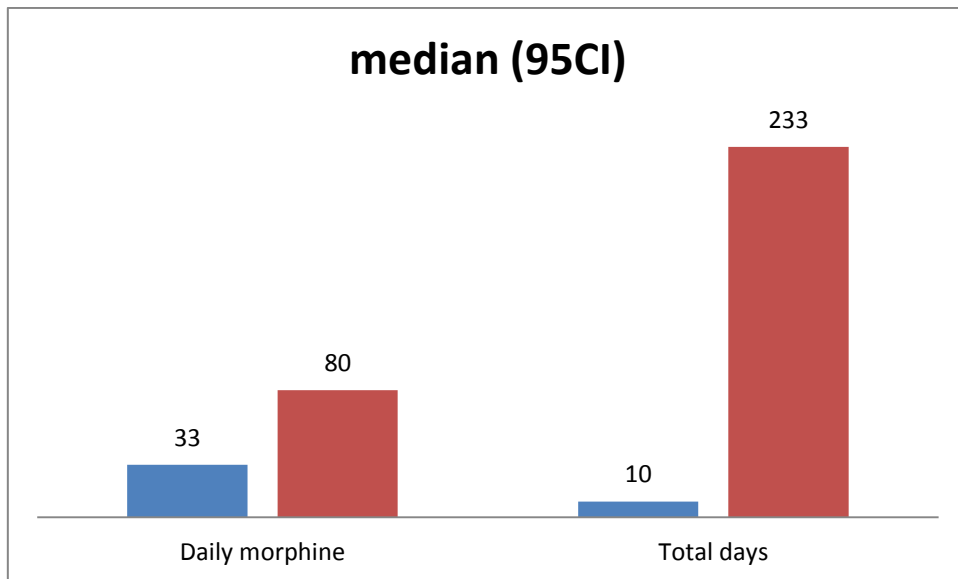
**Figure 4:** Use of non-opioid medications

**Table 5:** Use of analgesic medication classes the year before surgery

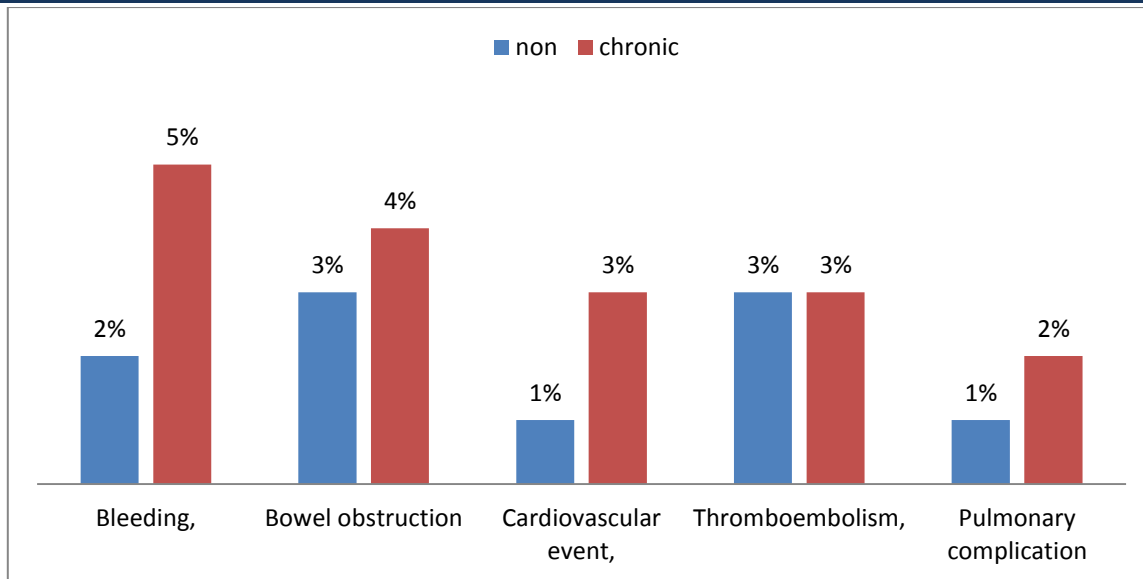
	Before G1	After G1	Before G2	After G2	Before G3	After G3
Antidepressant						
Citalopram	15	10	10	6	8	4
Escitalopram	20	12	9	8	11	7
Antiepileptic						
carbamazepine	10	5	5	4	4	2
clobazam	8	4	6	3	4	1
clonazepam	7	5	5	4	4	3
Antianxiety						
Zoloft	11	8	3	1	5	4
Luvox	8	4	2	1	4	4
Muscle relaxant	8	4	3	2	4	3
Nonnarcotic analgesic	10	6	3	1	4	2



**Figure 5:** Incidence Rate Ratios for Total Morphine Equivalents before surgery



**Figure 6:** ≤40% Excess BMI loss after surgery



**Figure 7:** Complications results of patients

## DISCUSSION

Two hundred patients were collected, and demographic data and information were statistically analyzed by relying on the statistical analysis program spss IBM soft. In addition to that, Microsoft Excel 2013 was used. In Table 1, the patients were distributed according to age in relation to the three groups. The average age ranged from 25 to 50 years, and the group was the most Repeat which of the three groups are, from 30-to 34 years old, as shown in Table 1.

In Table 2, patients were distributed according to gender. In group none G1, female patients were 63 patients, and males were 47. As for group 2, there were more female patients than males. Patients were distributed according to gender. In this group, 35 female patients and 17 male patients, and the third group no, the situation also changes a lot. The number of female patients is more than the males. The distribution of patients according to gender has seen an increase in the number of female patients twice the number of male patients (35 female patients and 18 male patients).

Table 3, in which patients were distributed based on their BMI before surgery, ranged from 30 to 61. By analyzing the BMI statistically, we find that the mean value and the logistic regression are  $45 + 10.33$ . Old age experienced significant increases in BMI, reaching  $59 \text{ kg/m}^2$ .

Through the results, a breath was found in the body mass index of more than 30 to 40% after the operation of bariatric surgery, and the mean value was, and the postoperative logistic regression became  $28 + 7.4$ . An increase in the use of opioids

was observed after surgery, and this differed all expectations by doctors, Supervisors of the process, and the reason for this. The increase is due to the patients suffering from pain or side effects after bariatric surgery.

Other studies were found to match this study in terms of the increase in the use of opioids after surgery, such as the Belle Kniel Suit 2009 study, where 500 patients who underwent were collected in this study, and the largest percentage of patients were women who underwent bariatric surgery, and an increase was found by 20% Patients who lost more than 33% of their BMI value were also noted to have increased rates of opioid use, as is the case in our study.

## CONCLUSION

in this cohort of patients who underwent bariatric surgery, there was greater chronic use of opioids after surgery compared with before. In general, opioids are essential for pain control after surgery due to their potent effect. But its side effects can be significant and include nausea, vomiting, constipation, urinary retention, drowsiness, impaired ability to think, and impaired respiratory function.

Opioid overdose and misuse are risks as well, particularly when opioids are used to treat persistent (chronic) pain. Although the use of opioids after surgery is intended as a short-term strategy for relieving pain while the body heals, the risk of abuse remains a concern.

## RECOMMENDATION

Cephalosporin antibiotic prophylaxis can be recommended in all obese patients 30 minutes before surgery with repeated administration if the surgery is twice the half-life of the antibiotic.

The prevalence of patients with a high degree of obesity is an epidemic that leads to an increasing number of bariatric operations. Presentation of risk factors in the traditional approach to opioid use in these patients, as well as the consequences of inadequate analgesia in these patients.

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