A cross-sectional study to find out the prevalence of gastrectomy and identify complications with associated factors (in Iraqi patients aged (30-60 years)

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ABSTRACT

This paper aims to find out the prevalence of gastrectomy and identify complications with associated factors (in Iraqi patients aged (30-60 years)

A cross-sectional study was conducted for 90 patients between the ages of 30 to 60 years who underwent a gastrectomy procedure, where information and demographic data were collected from a number of different hospitals, and the data were analysed by relying on the IBM SOFT SPSS 18 program. As for the figures related to the results of this study were based on Microsoft Excel 2013.

Complications in this study were evaluated according to the Clavien-Dindo classification, which is widely used in many countries.

The proposed classification of surgical complications takes into account the anatomical localization of the intervention; the basis is the presence and severity of the complications themselves. The classification includes methods of exclusion, taking into account the method of anesthesia, the need for intensive care and resuscitation, and also provides for an increase in the duration of treatment of patients

the results which found in this study were the length of the operation time for patients aged 50-60 years with 260.5 ± 53.3, and the blood loss rate is also high with a Mean±SD 432 ± 52, and this represents a real risk of increased mortality in older patients

In this study, the prevalence of complications was observed in patients who underwent gastrectomy at ages ranging from 50-60 years to 13 patients, with 43%

We conclude from this study that there is a statistically significant relationship between the prevalence of complications and age

In addition to the presence of several influencing factors that contribute to the prevalence of complications and deaths, the physiological capacity of the patient, "surgical stress, the

presence of cardiovascular diseases, respiratory diseases, diabetes mellitus, the general condition of the patient, and the ASA index.

Keywords: **ASA**, BMI, complications, gastrectomy, prevalence, Bleeding, surgical.

Introduction

For localized gastric cancer (early or advanced), complete removal of the tumour without leaving residual disease is the treatment of choice; To achieve this goal, it is necessary to obtain edges of tumor-free sections and to remove all potentially involved lymph node groups. [1,2,3] Surgery is today the most effective treatment for stomach cancer. Due to the different surgical results obtained between Japanese and Western surgeons, the most appropriate surgical technique is still a matter of debate [4,5,6,7].

Most Western surgeons did not accept the surgical technique they proposed for gastrectomy with D2-type lymphadenectomy owing to its morbidity and mortality, as confirmed in two prospective and randomized European studies [8,9,10]. Although these works have been criticized for their methodology, other international publications 3-7 show that experienced surgeons can perform D2 gastrectomy with low morbidity and mortality, even in patients over 70 years of age. In a previous publication for our group, we verified that both the type of gastrectomy and lymphadenectomy did not affect patients' quality of life, so they could be valid in patients with gastric cancer. [11,12,13]

Despite improvements in perioperative care, sutures, and surgical technique, the postoperative mortality rate for gastrectomy in the Western series from the past decade remains high (4% to 11.4%) (22), but in Japanese publications, mortality after postoperative gastrectomy decreases reported for 2% (8) (9) (12), up to 1,000 consecutive gastrectomy without postoperative mortality [14,15] There are general risks to start with. In addition to nerve injuries, this also includes bleeding, infection, or the development of a blood clot (thrombosis/pulmonary embolism).

Particular risks of gastrectomy include as pancreatitis (inflammation of the pancreas) and infection of the surrounding organs or large vessels. It can also happen that the seams in the intestine have leaks. This can be caused by inflammatory reactions or tissue death (necrosis) at the site in question. Intraoperative mortality is highly dependent on the general condition and previous illnesses of the patient and is given around 2-10%. [16,17,18].

Material and method

A cross-sectional study was conducted for 90 patients between the ages of 30 to 60 years who underwent a gastrectomy procedure, where information and demographic data were collected from a number of different hospitals, and the data were analysed by relying on the IBM SOFT SPSS 18 program. As for the figures related to the results of this study were based on Microsoft Excel 2013.

The primary data, which included age, sex, body mass index, preoperative serum albumin level, preoperative tumour location, and the type of relationship generated between postoperative complications and the extent of surgery, was documented.

The Clavien-Dindo classification was based on the classification of postoperative complications, as the Clavien-Dindo classification allows to know the adaptation of intraoperative complications, and the use of the Clavien-Dindo classification in all areas of surgery leads to obtaining the most accurate information content, and thus its value increases as a global tool in the classification of postoperative complications

The gastrectomy is performed openly, that is, through an incision in the middle of the upper abdomen. An operation of this magnitude is always performed under general anaesthesia, and in addition to the necessary examinations, the operation, of course, is also preceded by information about anaesthesia and the risks of the operation. On the day before the operation,

the patient should remain alert (i.e., abstain from food).

After opening the abdomen, the stomach is exposed with its blood supply, and after the attachments in the abdomen are cut, it separates from the esophagus and small intestine. The esophagus is attached directly to the side of the small intestine (the jejunum). The last part of the small intestine is closed off, and the parts of the small intestine in front of the esophagus are connected laterally with the next. After the operation, intensive care for 24 hours is usually needed.

Results

In this study, demographic information and data were collected from several different hospitals, where 90 patients were collected, distributed over ages ranging from 30 to 60 years, and the most frequent action in this study was from 30 to 39 years for 40 patients with 44.4 % It was followed by 50-60 years of age for 30 patients with 33.3%, 40-49 years for 20 patients with 22.2% and chi-square 15.67 as shown in table 1.

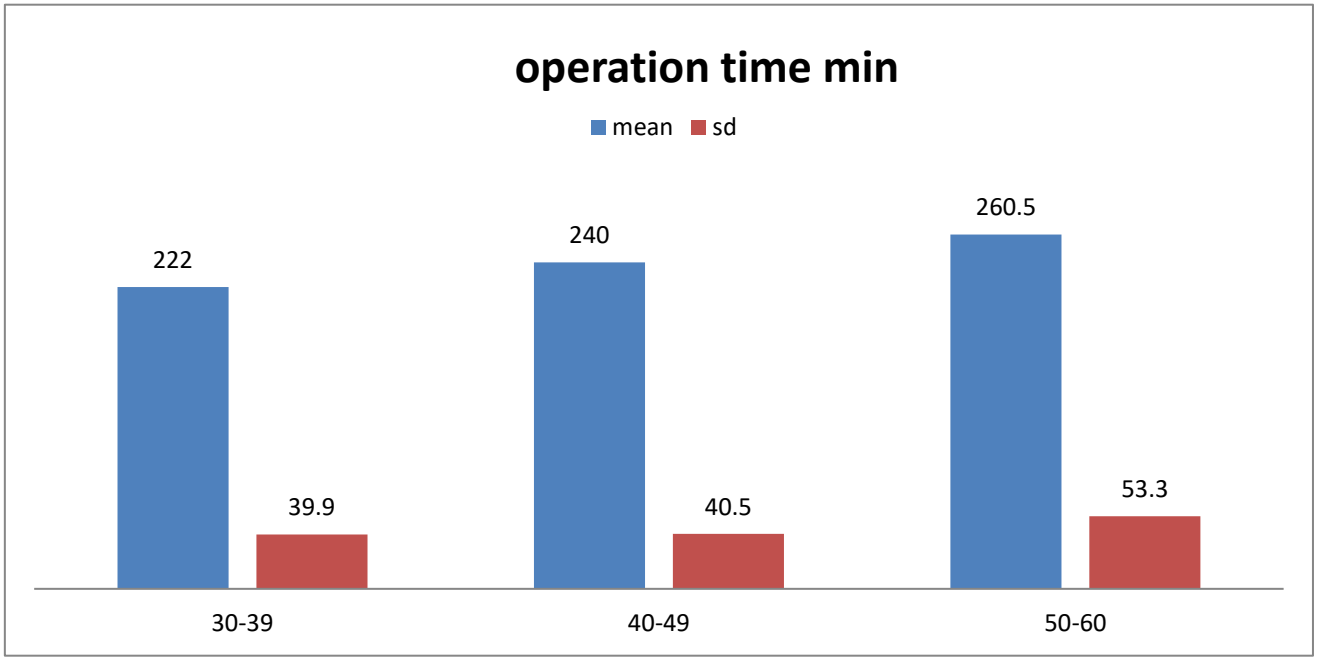
Table 1- Distribution of patients according to age, N=90

Age	F	P%	Chi-square
30-39	40	44.4	15.67
40-49	20	22.2	
50-60	30	33.33	

Table 2- Demographic results of patient

Variable	30-39	40-49	50-60	P value
Age (Mean±SD)	34±2.2	44.7±2.4	56.2±1.9	0.01
BMI (Mean±SD)	29.2±3.7	32.2±1.8	33.6±2.7	0.01
sex				
Male, N	30	13	18	0.029
female, N	10	7	12	
Comorbidities				
Hypertension ,N	13	6	12	<0.001
Diabetes ,N	10	5	10	
Heart Disease, N	7	5	5	
Others, N	10	4	3	
Disease duration (month)	9.2±2.2	11.3±3.4	12.4±6.9	<0.001
Symptom severity	9.9±4.1	10.5±5.1	12.2±6.3	0.05
Preoperative albumin (g/dL), Mean ± SD	2.99 ± 1.88	3.1±1.56	3.43±1.87	<0.001
ASA score, n (%)				
1-2	28	12	16	0.88
3-4	12	8	14	0.92

Figure 1- Results of patients according to Operation time (min) and Blood loss (ml)



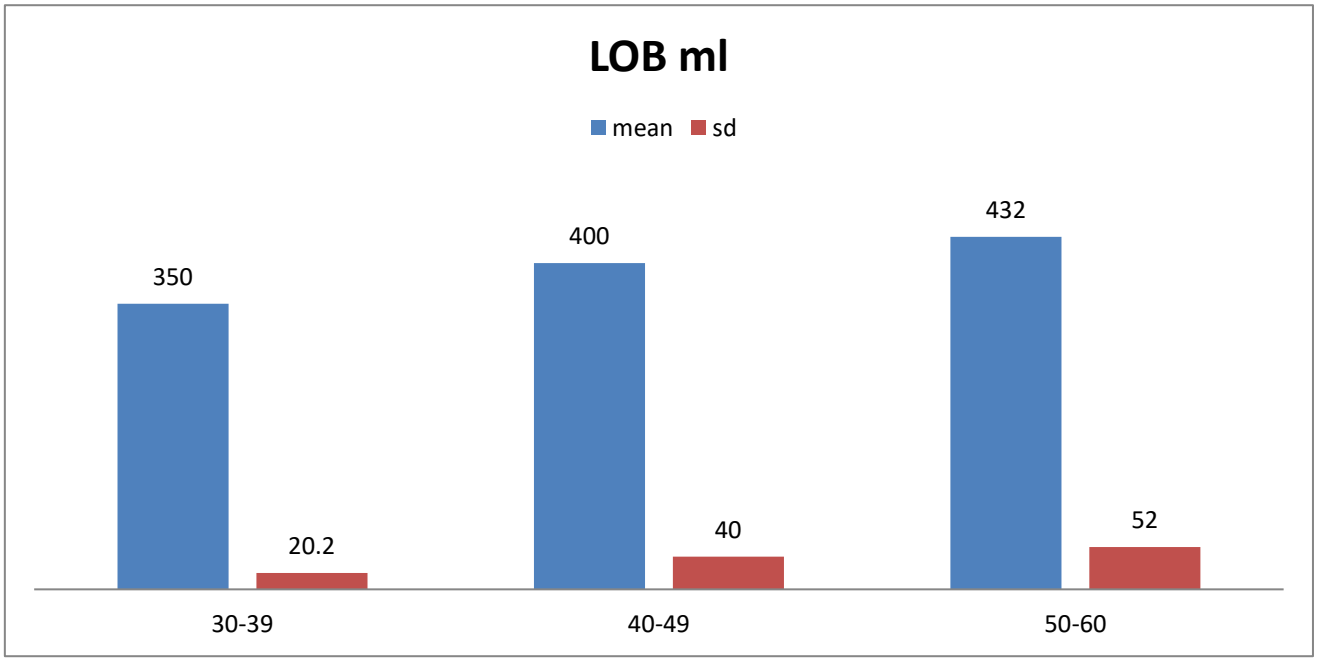


Figure 2- Distribution of patients according to Procedure of operation, n (%)

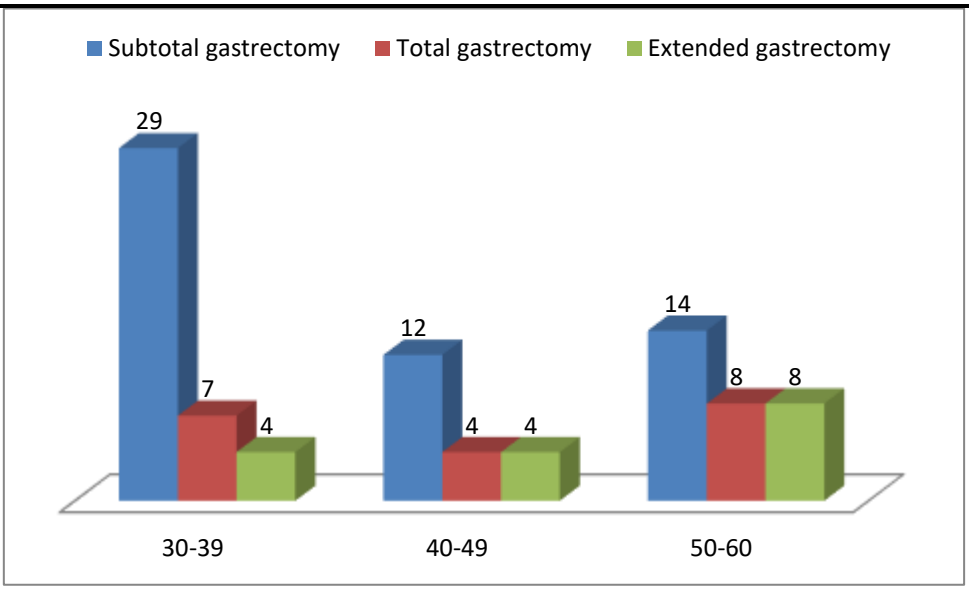


Figure 3- Result of patients for three groups according to Tumor size, Mean ± SD

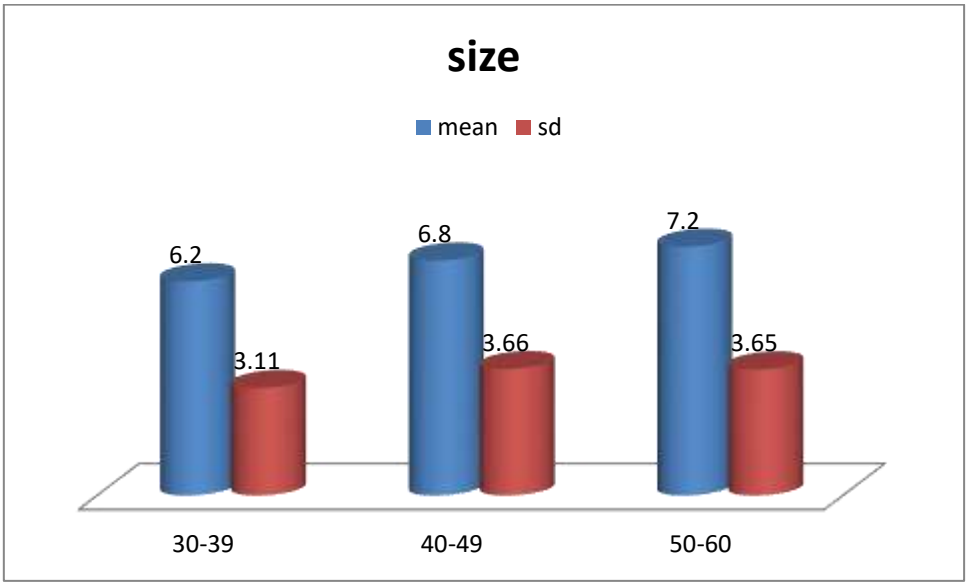


Table 3- Classification of gastrectomy complications (postoperative outcomes) Clavien-Dindo classification

	30-39	40-49	50-60
I	1	1	0
II	4	3	7
IIIa	1	0	2
IIIb	1	0	1
IVa	0	1	1
IVb	0	2	1
V	2	1	1

Table 4- Assessment of the type of complication

Type of complication	
Surgery-related complication	14
Surgical Site Infections	4
Deep surgical site infection	2
Bleeding	3
Gastroparesis/ileus	2
Perforation	3
Chyle leakage	2

Table 5- Logistic analysis to analyse the risk factor for mortality

Variable	Risk factor	CS-95%	P-value
Age	1.5	0.9-1.9	<0.001
Albumin	1.3	0.8-1.6	0.045
Operative time	1.1	0.7-1.4	0.003
Clavien-Dindo classification II	0.9	0.7-1.1	<0.001
Heart disease	0.8	0.5-1.02	0.004

Discussion

In this study, demographic information and data were collected from several different hospitals, where 90 patients were collected, distributed over ages ranging from 30 to 60 years, and the most frequent action in this study was from 30 to 39 years for 40 patients with 44.4 % It was followed by 50-60 years of age for 30 patients with 33.3%, 40-49 years for 20 patients with 22.2% and chi-square 15.67 as shown in Table 1 The classification of results was based on the distribution of ages for three different groups, and the statistical analysis showed an increase in BMI to ages ranging from 50 to 60 years at 33.6 ± 2.7. Patients were distributed according to gender, and the results showed an increase in the proportion of males For 61 patients, for females for 29 patients; in addition, the presence of comorbidities was detected for the patients, and the most frequent in this study were hypertension for 31 patients, diabetes for 25 patients, heart disease for 17 patients, and other comorbidities for 17 patients, and by distributing a questionnaire except patients to know the duration of the disease in months, a longer duration was found in patients aged 50-60 years for 12.4±6.9, and a statistically significant relationship was found between the three groups at p-value < 0.001

Patient data in our study are similar to those reported in other publications in terms of age, gender, and associated risk factors. The risk of ASA III and IV, which were described as the most

significant risk factors for patients, was assessed as shown in the logistic analysis.

From the analysis of postoperative complications in our study, it can be concluded that the overall morbidity rates after gastrectomy and D2 lymphadenectomy were moderate, especially when it comes to a group of patients with associated risk factors (high rate with ASA III and IV, as well as being overweight)

In Figure 1 it shows the results of patients according to Operation time (min) and Blood loss (ml). We note the length of the operation time for patients aged 50-60 years with 260.5 ± 53.3, and the blood loss rate is also high with a mean sd 432 ± 52, and this represents a real risk of increased mortality in older patients

Standardized evaluation of surgical interventions is limited by the lack of consensus on the definition of postoperative complications and their stratification by severity [9, 13-16]. In 1992, the general principles of classification of complications with the assignment of many degrees of severity were proposed (P. Clavien, 1992) [9]. Subsequently, this classification was supplemented by D. Dindo [17]. The Clavien-Dindo classification is widely used in many countries.

The proposed classification of surgical complications takes into account the anatomical localization of the intervention; the basis is the presence and severity of the complications themselves. The classification includes methods of exclusion, taking into account the method of anesthesia and the need for intensive care and resuscitation, and also provides for an increase in the duration of treatment of patients

At the same time, there was a significant association between the degree of surgical complications and the length of hospital stay ($p<0.01$). Thus, with complications of grades III and IV and the duration of inpatient treatment increased by an average of 1.5 times

In this study, the prevalence of complications was observed in patients who underwent gastrectomy at ages ranging from 50-60 years to 13 patients, with 43%

Given the age group of patients, there was an expected high rate of treatment complications. These complications are the result of exacerbation of existing comorbidities, primarily cardiovascular and respiratory diseases

The combination of various age-related physical, mental and social disorders in elderly patients causes the phenomenon of mutual exacerbation, affecting the quality of life, complicating the correct and timely diagnosis of diseases due to the impossibility of a full examination and, most importantly, affecting the choice of appropriate treatment. The specificity of the postoperative period in this category of patients is determined by biological and physiological changes in all organs and systems.

When identifying the type of complications in this study, the prevalence of complications related to surgery was observed for 14 patients, in addition to the presence of infections in the surgical site for four patients, then bleeding for three patients, and these were the most frequent complications in this study as shown in Table 4

Conclusion

In this study, the complications of gastrectomy were identified according to different ages, and we concluded from this study there is a higher prevalence of complications and deaths in older patients and through the logistic analysis to this study, the age factor was the most influential in 1.5 (0.9-1.9) with p value<0.001.

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