

## Research Article

## Benefit of Bariatric Surgery in Elderly

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## Abstract

It has been estimated that the elderly population will grow by 1% every year. The elderly population is growing also thanks to the progress made.

Obesity has become one of the biggest health problems affecting more than one third of the world population. The elderly population is no stranger to proportional increase in obesity. Until today has not found an effective treatment for obesity, surgical treatment is the most effective treatment today.

We analyze the results of bariatric surgery in elderly patients during 3 years. From a total of 9044 bariatric surgery, 451 (5%) were performed in elderly. More than 76% of the patients have co-morbidities. The type of bariatric surgery most frequent was sleeve gastrectomy performed in 70% of patients.

There were 38 (8.42%), peri-operative complicated patients: 6 (1.33) patients need re- operation. In 10 patients has been systemic complications related to their co-morbidities. Eight patients were re-admitted after discharge 5 of them with abdominal abscess.

There were no deaths in our cohort of study.

Bariatric surgery offers to elderly patients an acceptable outcome. It is true to give the opportunity to improve the quality of life for elderly patients who require bariatric surgery. It is imperative a new consensus conference panel to determine increasing the age for bariatric surgery that includes early elderly.

**Keywords:** Obesity; Elderly; Bariatric surgery; Comorbidities

## Introduction

It has been estimated that the elderly population will grow by 1% every year until 2040 [1]. In the literature of the 40s we can find that elderly patients are not per se a contraindication for mayor surgery [2]. Anyway, there is no doubt that mortality and morbidity in elderly patients is related to age and coexisting diseases [3].

Physical inactivity and high caloric intake have caused an increase in the obese population in a way that is considered a global epidemic [4].

Conservative treatments for obesity as medicaments, behavioral and physical activities have failed as instruments to stop the increase of obesepopulation; therefore, the surgical option appears to be best treatment for obesity and related diseases [5].

A logical reasonable question today: if, it is acceptable to limit to 65 years for bariatric surgery in obese patients? In 1991 the National Institutes of Health Consensus Development Conference on Gastrointestinal Surgery for Severe Obesity accept that the age range 18-60 is ideal for performing bariatric surgery [6]. The Aim of our study is to corroborate the results of bariatric surgery in elderly.

## Material and Methods

In this study, a retrospective analysis of patients that underwent bariatric procedures was performed a in our medical center between the years 2013-2015. All patients are monitored by a multidisciplinary team that analyzes and corroborates the indications to perform a bariatric operation.

The group study includes 451 patient that underwent bariatric surgery, which represent 4.98% of all bariatric surgery performed in the institution, 271 of them were female (60%) and 180 were male (40%). All the procedures were performed laparoscopically by a total of 39 expert surgeons. The mean age in the group study was 67.92 years old (Min. 65; max. 84). Patients under 70 years old were 385 and above 70 years old were 66 patients.

The mean Body Mass Index was 40.42 Kg/m<sup>2</sup> (min. 23 Kg/m<sup>2</sup> and max. of 85 Kg/m<sup>2</sup>).

## Results

The procedures performed distributed as follow: Sleeve

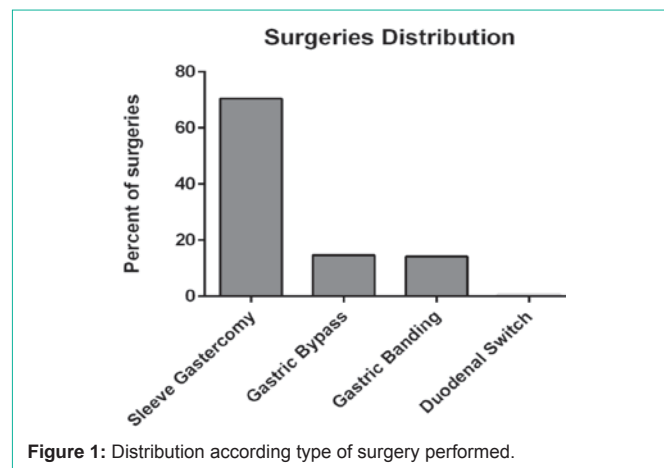


Figure 1: Distribution according type of surgery performed.

**Table 1:** Demographics characteristics.

	N	Mean	STD	Min	Median	Max
Age	451	67.92	2.83	65	67	84
Body mass index	451	40.42	5.37	23.78	42	71.9
Gender	Female 60%		Male 40%			
Healthy/No healthy	22.40%		77.60%			
Frequents Co- morbidities						
Diabetes	63%					
Hypertension	73%					
Hyperlipidemia	72%					
Fatty liver	20%					
Ischemic Heart dis.	16%					
Osteoarthritis	22%					
Reflux disease	12%					
Sleep apnea/snoring	16%					
Urinary incontinence	8%					
Depression	4%					
Chronic renal failure	3%					
Atrial fibrillation	4%					
Hypothyroidism	5%					
Vitamin D Deficiency	5%					
Gout	4%					
Asthma	6%					
Chronic lung disease	4%					
Osteoporosis	3%					
Gallstones	2%					

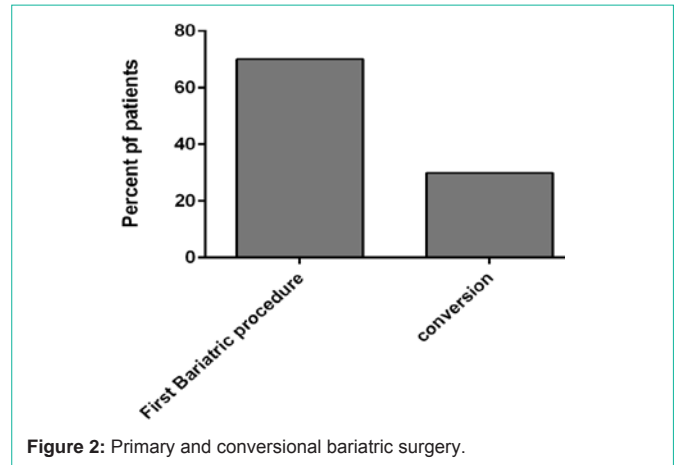
Descriptive Statistics of background variables (N: Number of patients; STD: Standard deviation; Min: Minimum, Max: Maximum).

Gastrectomy in 318 patients (70.5%), Gastric bypass in 66 (14.6%), gastric banding in 62 (14.2%) and duodenal switch in 3 (0.7%). In 316 (70.1%) patient was the first bariatric procedure, in 135 (29.9%) was a conversion from one to other type of bariatric surgery (Figure 1). The mean BMI change among elderly patients was 12.03kg/m<sup>2</sup> and no failure (less than 25% weight lost) were reported.

Patient that have no any co-morbidities were 101 (22.4%), but 350 (76.4%) have at less one co-morbidities. Diabetes, hyperlipidemia and hypertension were the most common morbidities in more than 70% elderly patients. Of 285 diabetics patients 69 were diagnoses as type I. We recognized a list of 25 diseases related to obesity that led to those patients to undergo bariatric surgery (Table 1).

Another aspect is that of patients undergoing primary bariatric operation 387 (86%) and those who spend a conversion from one type to another bariatric surgery in our study group make up a total of 64 patients (14%) (Figure 2).

There were 38 (8.42%), peri-operative complicated patients: 6 (1.33) patients need re- operation 4 for leak control, 1 due to bleeding and 1 for obstruction. In 10 patients has been systemic complications, 4 patients have difficult to drink, 6 leak under control, 2 intraluminal bleeding treated endoscopically and 2 with bleeding treated conservatively (Table 2).



**Figure 2:** Primary and conversional bariatric surgery.

**Table 2:** Compilations after bariatric surgery in elderly.

Complications N=38 (8.42%)			
REOPERATION	N=6 (1.33%)	SYSTEMIC COMPL.	N=10 (2.21%)
Leak control	4	Diabetes	3
Bleeding	1	Portal thrombosis	1
Obstruction	1	Hypertensive status	3
Non REOPERATION	N=14	RE ADMISION	N=8 (1.77%)
Difficulty in drinking	4	Abscess drainage	5
Leak under control	6	Portal thrombosis	1
Intraluminal bleeding	2	Dehydration	1
Bleeding medical treatment	2	Diabetic acidosis	1

Eight patients were re-admitted, in 5 patients need for interventional radiology for intra-abdominal abscess drainage, one portal thrombosis, one with dehydration and one with diabetes type I complications.

The hospital stay was 2.29 days average, in patients with complication was 2.38 days average for patients under 70 years old and 3.11 days for patients above 70's.

The weight loss in elderly patients was 72.44% of excess body weight; 64 (14%) patients underwent a second bariatric operation compared with patients after fist bariatric operation loss 5% to 15% less of their excess body weight.

## Discussion

To begin we must accept what is the correct definition of Elderly. Conventionally, "elderly" has been defined as a chronological age of 65 years old or older, while those from 65 through 74 years old are referred to as "early elderly" and those over 75 years old as "late elderly" [7].

Several risk factors for postoperative morbidity and mortality increase with age; increasing age itself remains an important risk factor for postoperative morbidity and mortality [8].

In our group of study we see that more than 70% of the patients suffer from co-morbidities, more than 66% are diabetics and more than 70% are hypertensive and hypelipidemic.

A laparoscopic approach can be used safely in an elderly

population undergoing surgery in a daily practice for miscellaneous conditions, whether elective or emergency operations [9].

We agree with Ceulemans R, et al. that the most adequate approach for elderly patients is laparoscopy. All type of bariatric procedures are performed today laparoscopically. The benefits of laparoscopic approach are well known and in the large list of improvement are important to emphasize: less pain reduced blood loss, shorter time to resumption of oral intake and earlier discharge from hospital [10].

The account of complication is higher than for general population, almost 6% but 37% of the complication are related to comorbidities; we found in our cohort of study that the complications related to the operative procedure are similar to the general bariatric operations. Controversial reports found in the literature referring to complications in bariatric surgery. Although the morbidity and mortality is higher in the elderly, bariatric surgery in the elderly is considered as safe as other gastrointestinal procedures [11,12].

Successively 14% of our group of study underwent conversion from one to other bariatric procedure. Victorzon study concludes that revisional bariatric surgery can be performed with an increased but acceptable risk, with at least short-term weight loss comparable to primary operations [13].

Sugerman Harvey, et al. report that bariatric surgery was effective for older patients with a low morbidity and mortality [14].

The committee that reviews the indications and contraindications to perform some type of bariatric surgery should think hard to not consent so that the procedure is performed. Considering that the complication rate does not differ extremely from younger patients and the death rate is low. In the paper published by Flanagan conclude that In conclusion, access to bariatric surgical care was impeded by insurance certification processes in 22% of medically acceptable candidates. Processes that delay or restrict efficient access to bariatric surgery are associated with a 3-fold mortality increase [15].

These short-term risks should be considered in the context of the long-term health effects of surgically induced weight loss on coexisting health conditions [16].

Elderly patients report a high rate of comorbidities improvement and an extremely improvement in quality of life as reported previously in the literature [17].

It is notable that the most common bariatric procedure in Israel is sleeve gastrectomy [18]. This finding is in correlation with our results indicating 70% of patients that underwent sleeve gastrectomy. In worldwide distribution of bariatric procedures differ from Israel (The most commonly performed procedure in the world was Roux-En-Y Gastric Bypass (RYGB), 45%; followed by Sleeve Gastrectomy (SG), 37%; and Adjustable Gastric Banding (AGB), 10%) [18].

In many countries the Sleeve gastrectomy increases popularity for many reasons: one, the patient has high motivation to ask for this procedure and second, for the surgeon it is technically easier to perform. Our patients report a great satisfaction with the sleeve gastrectomy operation.

## Conclusion

Bariatric surgery offers to elderly patients an acceptable outcome.

Although, elderly patients have more indexes of comorbidities, the surgeon must take into account the patient's general condition and make the maximum effort to improve the overall condition best and thus reduce the chances of complications.

It is true to give the opportunity to improve the quality of life for elderly patients who require bariatric surgery. It is imperative a new consensus conference panel to determine increasing the age for bariatric surgery that includes early elderly.

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