Quality of life of patients after bariatric treatment – preliminary report

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ABSTRACT

Introduction: Obesity afflicts approximately 3,000,000 people in Poland. Co-morbidities develop mainly in connection with morbid obesity. Bad health conditions connected with obesity may decrease the health-related quality of life (HRQOL). A body mass index of 30-34 kg/m^2, along with co-morbidities, could be a reco-mmendation for surgical treatment. Reduction of body mass may cause recovery or symptoms relief. Bariatric surgery is currently the most effective method of morbid obesity treatment.
Purpose: To evaluate the quality of life of patients after bariatric treatment.
Materials and methods: Research material was gathered in the 1st Department of General and Endocrinological Surgery, University Hospital in Bialystok, by applying standardized BAROS among 108 patients after bariatric treatment. The study group included 73 women (67.6%) and 35 men (32.4%), between 20 and 60 years old (average age ± 40 years), and with a BMI of 41-52 (average BMI 45.5).
Results: In 18 patients (16.6%) laparoscopic adjustable gastric banding (LAGB) was applied, in 58 (53.8%) sleeve gastrectomy was performed, and in 32 patients (29.6%) Roux-en-Y gastric bypass (RYGB) was applied. Significant difference ($p<0.0001$) was stated in BMI according to the type of procedure. A higher reduction of BMI was obtained after RYGB than after LAGB and sleeve gastrectomy. Evaluation of quality of life was conducted six months after the surgery. No significant difference ($p>0.05$) was found in the quality of life depending on the surgery type. Complications that occurred after surgeries did not significantly influence the subjective evaluation of quality of life.
Conclusions: The quality of life of the patients did not improve 6 months after bariatric surgery. This did not differ independently of weight loss in patients or of the type of surgery performed. Verifying obtained results after a longer period of time following the surgery is suggested.
Key words: Quality of life, patients, bariatric treatment

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INTRODUCTION

In 1997, World Health Organization (WHO) recognized obesity as an epidemic [1]. The largest group of obese people, approximately 15% of whole population, was noticed in United States. In Europe, problem of obesity touches 17-25% of population and in Poland, it is approximately 300 thousand people [1, 2]. Constantly growing amount of obese people is a worldwide problem and during last 20 years this amount doubled. According to statistical data, in 2008 it was 300 million people [2].

Body mass index (BMI) is crucial in recognition of the stadium of obesity. Currently, the waist-hip ratio (WHR) is getting more attention. It describes more precisely visceral obesity, which is important for etiopathogenesis of metabolic syndrome [3]. Morbid obesity is the main reason for development of co-morbidities: hypertension, type two diabetes, ischaemic heart disease, heart attack, dyslipidemia, osteoarthritis, cholecystitis, steatosis, sleep apnea, depressive disorders, neoplasms, etc. [4]. Bad health state connected with obesity may result in lowered quality of life (HRQOL).

It was proven that obesity treatment is highly important issue. Decrease in body weight leads to reduction in symptoms of many disorders in obese patients [5]. Efficiency of conservative treatment such as reducing the caloric value of in taken food, increasing physical activity, behavioral interventions and pharmacotherapy is limited. Distant results reduce side effects of pharmacotherapy and yo-yo effect.

Nowadays, bariatric surgery is the most efficient method of morbid obesity treatment. Bariatric treatment is recommended with BMI 30-34,9kg/m2 and recognized co-morbidities, where reduction of body mass may cause improvement or recovery in symptoms [6]. However, surgical treatment may bring postoperative complications, which are more dangerous for obese patients than for those with regular body mass. Those complications are usually a result of lack or decrease in cardiovascular or breathing reserve [7].

After many years of experience in surgical treatment of obesity, it has been proven that laparoscopic method dominates in this field. What is more, cooperation of multidisciplinary teams is also important in preoperative care and guarantee's safety and efficiency [8]. Results of morbid obesity treatment are evaluated basing on percentage of effective weight loss. Commonly applied criterion, which determines the efficient surgical procedure is 50% of body-mass loss (% EWL≥ 50%). Health-related quality of life (HRQOL) includes physical, psychosocial and emotional aspect of patients' health and that is why it can describe their satisfaction after applied treatment. It describes patients' subjective observations and estimates influence of treatment on everyday activities. HRQOL limitations are connected with extended field of estimation and with interaction of too many factors, which cannot be controlled by the examiner and which are not related to the disease or treatment. Scientific researches show improvement after bariatric procedures. Improvement of HRQOL is observed soon after the surgery.

However, quality of life similar to the rest of the population is observed two years after the surgery [8-10].

The aim of this study was to evaluate the quality of life of obese patients after bariatric treatment.

MATERIALS AND METHODS

Material was gathered using the standardized Bariatric Analysis and Reporting Outcome System (BAROS). BAROS is a quality of life questionnaire for morbidly obese patients and was proposed by psychologists Moorhead and Ardelt-Gattinger [11]. BAROS evaluates the percentage of excessive body mass (%EWL), improvement and/or recovery of co-morbidities, as well as five aspects of quality of life (self-esteem, physical activity, social activity, occupational and sexual activity, complications and reoperations). A final result is based on the improvement, impairment, or lack of changes in all five aspects. Each aspect is described as: much worse, worse, no changes, improvement, and significant improvement using the following grades: -0.5, -0.25, +0.25, and +0.5. Evaluation of changes in the BAROS questionnaire according to the type of surgery was performed using the Kruskal-Wallis test. Evaluation of complication occurrence was performed by the U Mann-Whitney test. Statistical significance was established at $p<0.05$.

Research was conducted in the 1st Department of General and Endocrinological Surgery, University Hospital in Bialystok, among 108 patients. Recognized co-morbidities included: type 2 diabetes in 60 (55.5%) patients, hypertension in 41 (37.9%), depressive disorders in 34 (31.5%), and *Helicobacter pylori* in 15 (13.9%). Quality of life was evaluated 6 months after bariatric surgery.

The study group consisted of 73 (67.6%) women and 35 (32.4%) men, between 20 and 60 years old (average age ± 40 years old), and with a BMI of 41-52 (average BMI 45.5). In 18 patients (16.6%) laparoscopic adjustable gastric banding (LAGB) was applied; in 58 (53.8%) sleeve gastrectomy (SG) was performed; and in 32 patients (29.6%) Roux- en- Y gastric bypass (RYGB) was applied.

RESULTS

Highly significant difference ($p<0.001$) was proved in BMI according to the type of procedure. A higher reduction of BMI was obtained after RYGB than after LAGB and sleeve gastrectomy.

Statistically significant difference ($p>0.05$) was not stated in changes of quality of life according to the type of procedure, 6 months after the surgery. Early complications (alvine obstruction, emesis, abdominal abscess, abscess in the area of band, wound infection) and late complications (nausea, acid indigestion, band slippage, band migration to gastrointestinal tract, sudden loss of consciousness, alvine obstruction, discomfort in epigastrium, anaemia) that occurred after the surgery did not significantly influence the subjective evaluation of quality of life.

Table 1. Changes in BMI – generally and according to the type of procedure.

Type of procedure	**Changes in BMI after the surgery**						
	Average	**Standard deviation**	**Minimum**	**Lower quartile**	**Median**	**Upper quartile**	**Maximum**
Generally	-2.61	2.40	-8.00	-4.00	-2.00	-1.00	8.00
LAGB n=18 (16.6%)	-1.50	1.10	-3.00	-2.00	-1.50	-1.00	0.00
RYGB n=58 (53.8%)	-5.03	2.09	-8.00	-6.00	-5.00	-4.00	4.00
Sleeve gastrectomy n=32 (29.6%)	-1.62	1.85	-8.00	-2.00	-2.00	-1.00	8.00
significance			< 0.001				

Table 2. Changes in the BAROS scale according to the type of procedure.

Evaluation	**Group**	**Average**	**Standard deviation**	**Minimum**	**Lower quartile**	**Median**	**Upper quartile**	**Maximum**	**Significance**
Changes in health state	General	3.70	0.79	1.0	3.0	4.0	4.0	5.0	
	LAGB	3.61	0.61	3.0	3.0	4.0	4.0	5.0	0.1353
	RYGB	3.87	0.79	1.0	4.0	4.0	4.0	5.0	
	SG	3.64	0.83	1.0	3.0	4.0	4.0	5.0	
Changes in self-esteem	General	2.21	1.05	-1.0	2.0	2.0	3.0	4.0	
	LAGB	2.06	0.87	1.0	1.0	2.0	3.0	4.0	0.3581
	RYGB	2.41	0.95	0.0	2.0	2.5	3.0	4.0	

	SG	2.15	1.15	-1.0	1.0	2.0	3.0	4.0	
Changes in physical activity	General	0.91	0.92	-2.0	0.0	1.0	2.0	3.0	
	LAGB	0.89	0.76	-1.0	1.0	1.0	1.0	2.0	0.6566
	RYGB	1.00	0.90	-1.0	0.0	1.0	2.0	2.0	
	SG	0.84	0.99	-2.0	0.0	1.0	2.0	3.0	
Changes in social activity	General	1.08	0.75	0.0	1.0	1.0	2.0	2.0	
	LAGB	1.00	0.77	0.0	0.0	1.0	2.0	2.0	0.8748
	RYGB	1.09	0.82	0.0	0.0	1.0	2.0	2.0	
	SG	1.10	0.72	0.0	1.0	1.0	2.0	2.0	
Changes in occupational activity	General	1.13	0.79	-2.0	1.0	1.0	2.0	2.0	
	LAGB	1.17	0.51	0.0	1.0	1.0	1.0	2.0	0.5243
	RYGB	1.25	0.76	-1.0	1.0	1.0	2.0	2.0	
	SG	1.05	0.87	-2.0	0.0	1.0	2.0	2.0	
Changes in sexual activity	General	0.92	0.73	-2.0	1.0	1.0	1.0	2.0	
	LAGB	0.78	0.65	0.0	0.0	1.0	1.0	2.0	0.4564
	RYGB	1.00	0.72	-1.0	1.0	1.0	1.0	2.0	
	SG	0.93	0.77	-2.0	1.0	1.0	1.0	2.0	

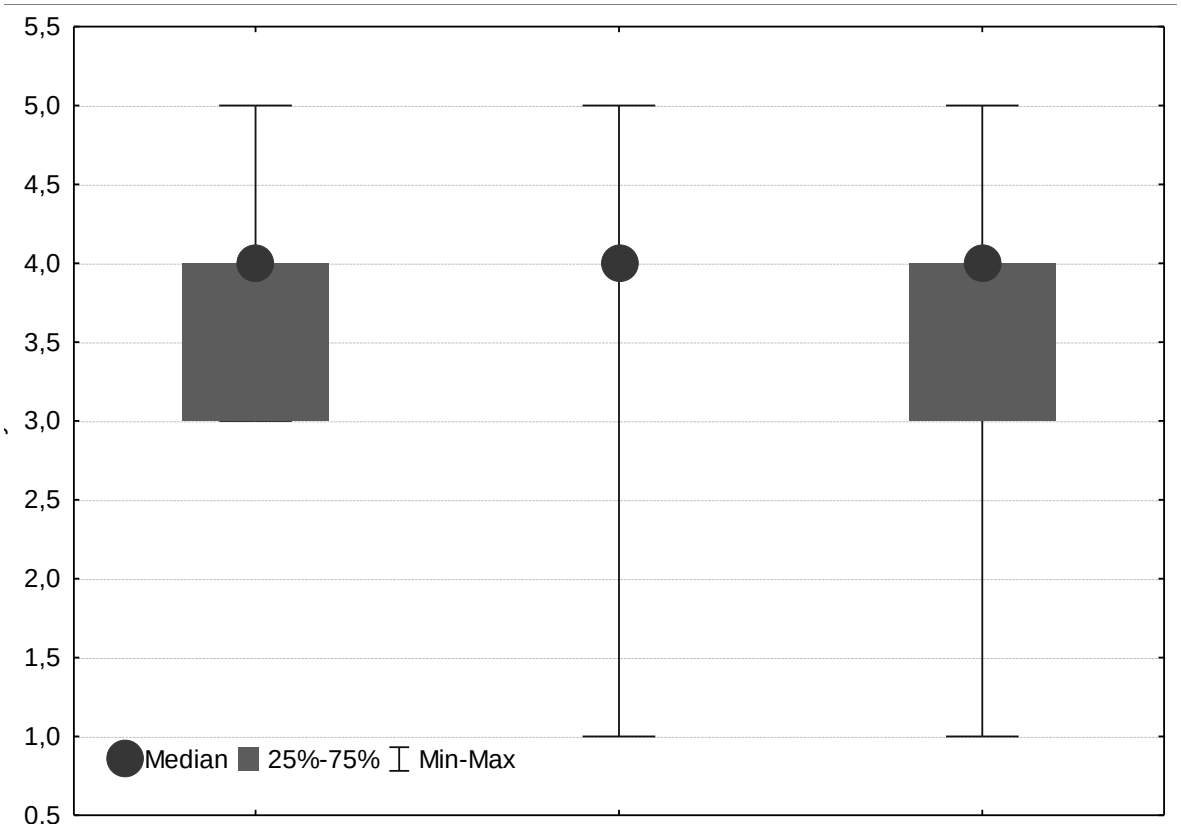

Fig. 1. Changes in quality of life according to the type of procedure evaluated by the BAROS questionnaire.

Table 3. Changes in BAROS scale according to the frequency of occurrence of early and late complications.

Evaluation	Group	Average	Standard deviation	Minimum	Lower quartile	Median	Upper quartile	Maximum	Significance
Changes in health state	General	3.70	0.79	1.0	3.0	4.0	4.0	5.0	
	yes	3.61	0.77	2.0	4.0	4.0	4.0	4.0	0.8354
	no	3.72	0.79	1.0	3.0	4.0	4.0	5.0	
Changes in self-esteem	General	2.21	1.05	-1.0	2.0	2.0	3.0	4.0	
	yes	2.23	1.17	0.0	2.0	2.0	3.0	4.0	0.9736
	no	2.21	1.04	-1.0	2.0	2.0	3.0	4.0	
Changes in physical activity	General	0.91	0.92	-2.0	0.0	1.0	2.0	3.0	
	yes	1.00	0.82	0.0	0.0	1.0	2.0	2.0	0.7734
	no	0.89	0.94	-2.0	0.0	1.0	2.0	3.0	
Changes in social activity	General	1.08	0.75	0.0	1.0	1.0	2.0	2.0	
	yes	1.46	0.78	0.0	1.0	2.0	2.0	2.0	0.0636
	no	1.03	0.74	0.0	0.0	1.0	2.0	2.0	
Changes in occupational activity	General	1.13	0.79	-2.0	1.0	1.0	2.0	2.0	
	yes	1.23	0.60	0.0	1.0	1.0	2.0	2.0	0.7698
	no	1.12	0.81	-2.0	1.0	1.0	2.0	2.0	
Changes in sexual activity	General	0.92	0.73	-2.0	1.0	1.0	1.0	2.0	
	yes	1.00	0.58	0.0	1.0	1.0	1.0	2.0	0.7806
	no	0.92	0.75	-2.0	0.0	1.0	1.0	2.0	

DISCUSSION

Numerous studies evaluating HRQOL after bariatric procedures indicate its improvement. Sanchez-Santos et al. [12] evaluated quality of life of 50 patients five years after Roux-en-Y gastric bypass (RYGB). It proved that surgery caused a reduction in co-morbidities, body-mass loss and 56% of patients defined quality of life as very good.. Karlsson et al. [13] evaluated HRQOL among 651 obese patients after bariatric treatment and among 621 patients treated conservatively. Observation lasted 10 years. Results of treatment and quality of life appeared to be better in group of patients after surgical treatment. Improvement in quality of life was stated after 6 months. Further improvement was observed in following years. Maximal reduction in body mass loss was obtained in first year after the surgery. Results of sleeve gastrectomy (SG) were evaluated by Bobowicz et al. [14] among 84 patients during 5 years after the surgery. Positive changes in quality of life were obtained in physical, social and occupational aspects. Slight improvement was obtained in sexual aspect. Very good global result was obtained basing on BAROS in 30% of patients. 13% of patients reported lack of effects. Better results were observed in women – reduction of 46.5% of excessive body mass (EWL) while in men it was 35.3%.

Our analysis embraced three types of surgeries applied the most frequently in respect to evaluation of quality of life. Six months after the surgery reduction of 29.92%% of the body mass (EWL) was observed. However, significant difference in HRQOL was not found. Body mass reduction is a calculable factor of quality of life in obese patients. However, there are other factors, which determine HRQOL. Lier et al. [15] indicated coexisting with psychological and emotional disorders. Ignoring them before the surgery may lead to increase in symptoms and may influence negatively results of bariatric treatment. Authors estimated intensity of depressive disorders among 127 patients after bariatric treatment. They confirmed that depression influenced negatively quality of life. Kalarchian et al. obtained similar results along with lesser reduction of the body mass after the surgery. It was also noticed that needles skin which left after reduction of the body mass is an important aspect which decreases HRQOL.

In our analysis, special attention was paid to factors, which may influence HRQOL such as co-morbidities or postoperative complications. Small percentage of complications was noticed similar to this presented in literature [17, 18]. Examination of patients proved positive influence of performed procedures. However, early evaluation of quality of life was planned only six months after the surgery. Long-term observation could be helpful in evaluation of efficiency of bariatric surgery.

CONCLUSIONS

The quality of life of the patients did not improve 6 months after bariatric surgery. This did not differ independently of weight loss in patients or of the type of surgery performed. Verifying obtained results after a longer period of time following the surgery is suggested.

Conflicts of interest
We declare that we have no conflicts of interest.

REFERENCES

1. Ogden CL, Carroll MD, Curtin LR, McDowell MA, Tabak CJ, Flegal KM. Prevalence of overweight and obesity in the United States, 1999-2004. JAMA. 2006 Apr; 295(13): 1549-55.
2. Schneider BE, Mun EC. Surgical management of morbid obesity Current Problems in Surgery 2008, 45, 68-137.
3. Szczęsny W, Gniłka W, Dąbrowiecki S, Reśliński A. Rola chirurgii w leczeniu otyłości patologicznej. Co lekarz rodzinny wiedzieć powinien? Nowa Medycyna 1994; 3:173-7.
4. Fontaine KR, Redden DT, Wang C, Westfall AO, Allison DB. Years of life lost due to obesity. JAMA, 2003 Jan 8; 289(2):187-93.
5. Sugerman HJ. Traetment of Obesity. J Gastroint Surg. 2003 May-Jun 7(4):476-7.
6. Wyleżoł M, Paśnik K, Dąbrowiecki S, Głuszek S, Michalik M, Strzelczyk J, Wierzbicki Z, Kwiatkowski A, Stanowski E. Polskie rekomendacje w zakresie chirurgii bariatrycznej. Videosurgery and Other Mini invasive Techniques 2009, 4 (suppl 1), 31-4.
7. Fernandez AZ, Dernaria E., Tichansky DS, Kellum JM, Wolfe LG, Meador J, Sugerman HJ. Multivariate analisys of risk factors for death following gastric bypass for treatment of morbid obesity. Ann Surg. 2004 May; 239(5): 698-702.
8. Kaska Ł, Makarewicz W, Stefaniak T. Strategia chirurgicznego leczenia otyłości patologicznej. The strategy of surgical treatment of morbid obesity. Kardiologia na co dzień. 2007; 3(2): 94-101. (Polish)
9. Andersen RJ, Aasprang A, Bergsholm P, Sletteskog N, Väge V, Nativig GK. Health-related quality of life and paid work participation after duodenal switch. Obes Surg 2010 Mar; 20(3): 340-5.
10. Helmio M, Salminen P, Sintonen H, Ovaska J, Victorzon M. A 5-yar prospective quality of life analysis following laparoscopic adjustable gastric banding for morbid obesity. Obes. Surg. 2011; 21:1585-91.
11. Moorehead MK, Ardelt-Gattinger E, Lechner H, Oria HE. The validation of the Moorehead-Ardelt Quality of Life Questionnaire II. Obes Surg. 2003 Oct; 13(5):684-92.
12. Sanchez-Santos R, Del Barrio MJ, Gonzalez C, Madico C, Terrado I, Gordillo ML, Pujol J, Moreno P, Masdevall C. Long-term health – related quality of life following gastric bypass: influence of depression. Obes. Surg. 2006 May;16(5):580-5.
13. Karlsson J, Taft C, Ryden A, Sjőstrőm L, Sullivan M. Ten-year trends in health-related quality of life after surgical and conventional treatment for severe obesity: the SOS intervention study. Int. J. Obes. 2007 Aug; 31(8): 1248-61.
14. Bobowicz M, Lehmann A, Orłowski M, Lech P, Michalik M. Preliminary outcomes 1 year after laparoscopic sleeve gastrectomy based on Bariatric Analysis and Reporting Outcome System (BAROS). Obes. Surg. 2011Dec; 21(12):1843-8.
15. Lier H, Bringer E, Hove O, Stubhaug B, Tangen T. Quality of life among patients undergoing bariatric surgery: associations with mental health-A1 year follow-up study of bariatric surgery patients. HQLO. 2011 Sep; 26: 9-79.
16. Kalarchian MA, Marcus MD, Levine MD, Soulakova JN, Courcoulas AP, Wisinski MS. Relationship of psychiatric disorders to 6-month ouctomes after gastric bypass. Surg. Obes Relat Dis. 2008 Jul-Aug; 4(4): 544-9.
17. Tice JA, Karliner L, Walsh J, Petersen AJ. Gastric banding or bypass? A systematic review comparing the two most popular bariatric procedures. Am J Med. 2008 Oct; 121(10): 885-93.
18. Hauser DL, Titchner RL, Wilson MA, Eid GM. Long-term Outcomes of Laparoscopic Roux-en-Y Gasrric Bypass in US Veterans. Obes Surg. 2010 Mar; 20(3): 283-9.