

Bariatric surgery in University Clinical Centre Tuzla and Bosnia and Herzegovina: where we are and where we want to be

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ABSTRACT

Bariatric surgery has emerged as the most effective treatment for morbid obesity, offering substantial and sustained weight loss and improvement in comorbid conditions. This paper reviews the development, implementation, and outcomes of bariatric surgery at the University and Clinical Centre Tuzla based on a retrospective analysis of patients who underwent bariatric surgery over a three-year period. A significant weight loss was observed, postoperative complications were minimal, with no in-hospital mortality. The bariatric surgery program demonstrates a significant progress in treating morbid obesity in Bosnia and Herzegovina.

Keywords: complications, retrospective analysis, weight loss

INTRODUCTION

Obesity has rapidly emerged as one of the most significant public health challenges of the modern era, evolving into a global pandemic. In 1975 only 5% of the global population was considered obese, but by 2014 this figure more than doubled to 13% (1–3). This epidemic contributes to reduced life expectancy, increased morbidity and mortality, and escalating healthcare costs (4–6). Bariatric surgery has emerged as a highly effective treatment for pathological obesity, offering both short-term and long-term benefits for patients (7–13). Each year over 500,000 bariatric surgeries are performed globally, reflecting the increasing acceptance and success of these procedures (14). This surgical branch focuses on procedures that modify the gastrointestinal tract to promote weight loss, typically categorized into three main types: restrictive, malabsorptive, and combined restrictive-malabsorptive surgeries (15–18).

BARIATRIC SURGERY IN BOSNIA AND HERZEGOVINA

The initial bariatric surgeries in Bosnia and Herzegovina (B&H) were conducted by Dr. Asim Alibegović, a Swedish

surgeon of Bosnian origin. In November 2010 Dr. Alibegović performed several bariatric surgeries as a visiting surgeon at the General Hospital Dr. Abdulah Nakaš in Sarajevo, 25 surgeries were performed before it was discontinued.

In February 2011 Professor Fuad Pašić and his team, with assistance of Professor Miroslav Bekavac Bešlin from the Clinical Hospital Centre Sisters of Mercy in Zagreb (Croatia), performed the first bariatric surgery at this Institution. Professor Bešlin played a crucial role in transferring knowledge and skills, supervising the development of the bariatric surgery program in Tuzla.

In this paper we reviewed the development, implementation, and outcomes of bariatric surgery at the University Clinical Centre Tuzla, Bosnia and Herzegovina (B&H).

OUR EXPERIENCE

The outcomes presented are based on a comprehensive evaluation of 50 patients who underwent bariatric surgery at the Surgery Clinic of the University Clinical Centre Tuzla over a three-year period (2018–2020). The evaluation included both direct clinical follow-ups and phone surveys, given that some patients resided in other cantons and countries (Table 1).

The patients' age ranged from 22 to 64 years, with the average age of 35.5 years. They presented with a variety of comorbidities, with each patient having between one and nine associated diseases. The minimum weight loss observed among the patients was 20 kg, and the maximum was 90 kg, with the

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average weight loss of 38 kg over the three-year monitoring period. Postoperative complications were minimal. One patient required a revision surgery due to bleeding from the resection line on the stomach, necessitating a repair procedure. No radiological or clinical leaks were recorded in any of the patients, and there was no in-hospital mortality.

Table 1. Breakdown of the performed surgeries

Type of surgery	Number of surgeries
Sleeve gastrectomy	35
BPD	10
BPD/DS	3
Lap-band surgery	2
Mini gastric bypass (Open)	2
Open sleeve resection	1
Total	50

BPD, biliopancreatic diversion; BPD/DS, biliopancreatic diversion with duodenal switch

Long-term follow-up indicated stable weight loss and improvement in comorbid conditions. Two patients required revision surgeries due to weight regain two years after their initial operations.

A survey conducted at six, twelve, twenty-four, and thirty-six months post-surgery assessed patient satisfaction and quality of life. The survey included questions about weight loss, the continuation of diabetes and hypertension therapy, improvements in sleep and self-confidence, and overall well-being. The results indicated a high level of patient satisfaction, with all respondents reporting improved quality of life post-surgery.

Two fatalities were recorded. The first one, a patient weighing 240 kg, died 15 days after surgery due to a suspected massive thromboembolic event. The second one died six months after surgery of a massive ischemic stroke, which was not related to the surgical procedure.

Overall, the results demonstrate the effectiveness of the bariatric surgery program at the Surgery Clinic of the University Clinical Centre Tuzla in achieving significant weight loss and improving comorbid conditions in morbidly obese patients.

The average weight loss of 38 kg among the patients underscores the surgery's potential to transform the patients' health and quality of life. The minimal postoperative complications and absence of in-hospital mortality in the Tuzla cohort highlight the high standards of care and surgical expertise at the clinic. The success of the Tuzla Clinic can serve as a model for other developing countries looking to establish or enhance their bariatric surgery programs. Our results are similar to those of other bariatric surgery centers. Well-educated staff and multidisciplinary approach are mandatory (19,20). International guidelines recommend comprehensive care involving surgeons, endocrinologists, dietitians, psychologists, and other specialists to address the multifaceted needs of obese patients.

Despite the promising results, several challenges and limitations must be addressed. The study's sample size of 50 patients, while informative, limits the generalizability of the findings. Future research with larger cohorts is necessary to validate these results and provide a more robust evidence base. Another limitation is the follow-up period. While a three-year follow-up provides valuable insights into medium-term outcomes, long-

term data (beyond five years) are essential to fully understand the durability of weight loss and the persistence of comorbidity improvements.

FUTURE DIRECTIONS

To enhance the development of bariatric surgery in B&H, several steps are recommended. The first one is to establish additional centers of excellence equipped with the necessary infrastructure and trained multidisciplinary teams which will increase access to bariatric surgery and improve patient outcomes. The second one is to enhance continuous professional development and specialized training for surgeons and support staff. Partnerships with established international centers can facilitate knowledge transfer and skill enhancement.

In conclusion, the bariatric surgery program at the University Clinical Centre Tuzla demonstrates significant progress in treating morbid obesity in Bosnia and Herzegovina. The study's findings underscore the importance of a multidisciplinary approach, meticulous surgical technique, and comprehensive postoperative care.

AUTHOR CONTRIBUTIONS

Conceptualization, F.P. and A.K.; methodology, N.S., E.A. and E.A.; validation, F.P. and A.K.; formal analysis, J.S., L.J., R.S. and J.H.; resources, F.P.; data curation, A.K.; writing—original draft preparation, N.S., E.A., E.A., J.S., L.S., R.S. and J.H.; writing—review and editing, F.P. and A.K.; supervision, F.P.; project administration, F.P.; funding acquisition, F.P. All authors have read and agreed to the published version of the manuscript.

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