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**Ocena kosztów opieki zdrowotnej u pacjenta przed i po  
chirurgicznym leczeniu otyłości w Polsce.**

**Rozprawa na stopień doktora nauk medycznych i nauk o zdrowiu  
w dyscyplinie nauki medyczne**

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## **Streszczenie w języku angielskim**

**Introduction:** obesity is a chronic disease that tends to recur. It is a very serious public health problem - it is now one of the most common non-communicable diseases in the world, and all countries (without exception) are affected by it. Treatment of obesity-related disease is based on three main pillars: behavioural interventions, pharmacotherapy and surgical procedures. The effectiveness of these approaches varies, and the main challenge is the long-term maintenance of the achieved effect. Bariatric surgery is undoubtedly the most effective method, leading to a sustained weight reduction of 25-30%. It is associated with many health benefits and thus can lead to a reduction in health care costs. However, in Poland, we do not have data on the impact of bariatric surgery on state spending on drugs and care for patients with obesity-related disease undergoing such treatment. The aim of this dissertation was to analyse health care costs (with particular emphasis on drugs) and their structure for obese patients one year before and one year after bariatric surgery, based on data from the National Health Fund (NHF).

**Data and methods:** a retrospective analysis of the nationwide database of the National Health Insurance Fund was conducted. The study included 2390 adult obese patients who underwent bariatric surgery in 2017. We analysed the structure of health care costs (hospitalizations, medications, outpatient specialty services, psychiatric care and addiction treatment, inpatient rehabilitation, dental treatment, nursing and care services, primary care, preventive and pilot health programs), as well as total costs and costs per patient in the year before bariatric surgery and in the year after. In addition to total drug costs, drug costs were assessed by anatomical-therapeutic-chemical (ATC) groups, and their average costs per patient in the pre- and post-operative periods were compared.

**Results:** the total health care cost in the post-operative period was about 3 million PLN lower than in the pre-operative period. After bariatric surgery, a reduction of about 59% in costs related to inpatient treatment was observed. There was also a significant reduction in costs associated with outpatient specialized services, psychiatric care and addiction treatment. A negative correlation was found between changes in medical costs for patients undergoing surgery and their age. There was a significant increase in total drug costs and average drug costs per patient in the first year after bariatric surgery. This increase was mainly due to the use of low-molecular-weight heparins in the first month after surgery. In contrast, the total costs of hypoglycaemic drugs decreased by 46%, hypotensive drugs by 29%, and hypolipemic drugs by 38%. The costs of medications used to treat infections have also significantly decreased.

**Conclusions:** in Poland, health care costs in the year after bariatric surgery are lower than in the year before surgery (a larger cost difference is observed in younger patients). The main

factor influencing this change is the reduction in costs related to hospital treatment. In contrast, total drug costs are increasing, which is mainly due to the perioperative use of low-molecular-weight heparins. There are significant decreases in the costs of antidiabetic, hypolipemic, hypotensive drugs and those used to treat infections.