Primary and secondary nonresponse following bariatric surgery

IMPACT

The true relevance of scientific research includes more than merely feeding one's curiosity. Ideally, research should provide new insights and scientific evidence that have effect beyond its area of expertise. The scientific, societal and economic impact of the research reflected in this thesis are described in this chapter.

RESEARCH

As stated in Chapter 1, the main aim of this thesis is to study primary and secondary nonresponse following bariatric surgery from both a clinical and basic science perspective and provide answers to the following questions:

1. What is the definition of primary and secondary nonresponse following bariatric surgery used in scientific literature today?
2. What is the definition of primary and secondary nonresponse following bariatric surgery in daily clinical practice?
3. What would be the preferred consensus-based definition of primary and secondary nonresponse following bariatric surgery?
4. What is the diagnostic value of the use of upper gastro intestinal contrast studies in patients with primary and secondary nonresponse following Roux-en-Y gastric bypass?
5. What is the efficacy in terms of weight loss of secondary adjustable gastric banding in patients with primary and secondary nonresponse following Roux-en-Y gastric bypass?
6. What is the safety of secondary adjustable gastric banding in patients with primary and secondary nonresponse following Roux-en-Y gastric bypass?
7. Is there a link between altered Paneth cell or goblet cell function and nonresponse following Roux-en-Y gastric bypass?

In Chapter 10, we concluded the following:

1. There is a worrisome lack of uniform definitions for primary and secondary nonresponse following bariatric surgery in scientific literature.
2. Daily clinical practice in bariatric surgery is similarly affected by an absence of uniform definitions for primary and secondary nonresponse following bariatric surgery.

3. Primary nonresponse is defined as weight loss less than 15% total body weight loss at least 18 months after initial surgery. Secondary nonresponse is defined as weight gain more than 20% of total weight loss at least 24 months after initial surgery.
4. The reliability of upper gastro intestinal contrast studies in assessment of pouch size following Roux-en-Y gastric bypass is poor and the usefulness of this imaging technique should be restricted to detection of gastro-gastric fistula.
5. Laparoscopic adjustable gastric banding in patients with nonresponse following Roux-en-Y gastric bypass results in moderate amounts of additional weight loss (17.6% EWL)
6. With a complication rate of 29.5%, 16% surgical band removal and 2% mortality, the moderate additional weight loss caused by secondary laparoscopic adjustable gastric banding does not outweigh the risks.
7. Our findings could not provide evidence to support our hypothesis about the involvement of altered Paneth cell or goblet cell function in nonresponse following bariatric surgery.

RELEVANCE

As stated throughout this thesis, we are dealing with an obesity pandemic. At the start of this research project in 2016, an estimated 13% of the world adult population were considered obese.[1] The latest numbers in the Netherlands show that 50% of adults are considered overweight and 14% are considered obese.[2] Ever since, the global burden of obesity on health, social and economic status is expanding. If left untreated, the prevalence of obesity is estimated to rise to 20% of the global population in 2025.[3] These increasing numbers of people suffering from obesity, obesity related comorbidities and reduced quality of life will gravely affect our society and our economy.

Bariatric surgery is the most effective treatment of morbidly obese patients with regard to weight loss, reduction of obesity related comorbidities and improved quality of life in both short and long-term follow-up. Despite these great results, nonresponse following bariatric surgery is one of the big issues left to tackle. Optimization of bariatric surgery by reducing the percentage of nonresponse will result in less obesity related comorbidities and therefore less health care expenditure and a higher quality of life.

Therefore, the studies portrayed in this thesis have more value than merely scientific. All efforts in treating or better yet preventing nonresponse following bariatric surgery will have additional societal as well as economic value. The economic value of this

thesis can be found in the recommendations on work-up and treatment of nonresponse. For example, omitting the routine upper gastro intestinal contrast study as recommended in Chapter 5, will result in a reduction of health care costs. The social value of this thesis might be slightly more indirect, as this thesis can be considered groundwork for further improvement of the perioperative care in bariatric surgery. Uniformity in the definition of nonresponse will eventually result in better postoperative decision making and therefore will improve the quality of bariatric care. Reduction in the occurrence of nonresponse following bariatric surgery will result in more sustainable weight loss and therefore an increase of quality of life.

TARGET AUDIENCE AND ACTIVITY

The outcome of this research project can be of interest to several target audiences. Health care professionals working in the field of obesity and bariatric surgery should be informed about nonresponse as this remains a challenge in the postoperative care of bariatric surgery. The scientific output from this thesis was distributed among this target audience. First of all, by presenting the results at the most important national and international bariatric surgery conferences. Besides these scientific meetings, our output has been presented at bariatric expert meetings as well as integrated bariatric care meetings, in order to raise awareness and stimulate the incorporation in daily clinical practice. Furthermore, all chapters (but one) are published in a peer reviewed journal indexed on Pubmed and therefore available to a broad readership.

Second, health care legislators and policy makers should be aware that nonresponse is more than just a benchmark to assess quality of care. It is just as inaccurate to consider nonresponse to be failure of the bariatric surgeon performing the bariatric procedure as it is inappropriate to state that it is the patient failing the surgery. The etiology of nonresponse following bariatric surgery is multifactorial and there is still a lot more to unravel about this phenomenon in order to treat and prevent it. More sustainable funding to further develop a strategy to prevent and treat nonresponse would be of great value for the improvement of bariatric care and therefore public health.

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