



New developments in bariatric and metabolic surgery and HIPER-1 study

Alper Çelik

Dear Editor,

Metabolic syndrome and type 2 diabetes, which is the most important component of this syndrome, has become a pandemic creating a global health problem (1). Approximately 8-10% of the global health expenditure is being spent for obesity, and these numbers are increasing every day (2). Taking the modern diet and environmental conditions into consideration, it is evident that obesity will become a more serious health problem in the near future (3).

Although it is expressed in many recognized guidelines that the preferential treatment of obesity is diet and lifestyle modifications, it is impossible to obtain the desired results with this treatment method in majority of the patients (4). In fact, even in individuals with insulin resistance and without pre-diabetes or with non-morbid obesity, this approach fails to achieve clinical goals (5).

Currently the most effective and long-term results in the treatment of obesity can be achieved with Metabolic and Bariatric Surgery (6). Bariatric surgical procedures not only treat obesity but also provide better results than medical treatment, although varying according to procedure type, through neuro-humoral mechanisms independent of weight loss in the treatment of accompanying diseases -especially- type 2 diabetes (7, 8).

However, we still do not exactly know the details of the road that leads to this success. Restrictions on calorie intake, changing gut-brain axis, absorption alterations, modifications in the microbiota are some of the factors that we know partially; while especially the change in the level of small intestine derived hormones, when these levels have to be changed, which procedure results in what extent of alterations are still unknown. However, the surgical community acts as if we have found all the answers and have forgotten the actual problem. The concern that this attitude will lead to adverse consequences in the future obliges every surgeon to review their practice. Several significant reasons for such concerns have recently revealed themselves in written, social and visual media. Over the past 3 months, the negative consequences of obesity surgery along with mortalities have been covered in all aspects of the media and our community has been affected from this situation.

Who should perform such procedures, under what conditions, and after what type of training are the contents of another discussion. Nevertheless, why only the negative consequences of obesity surgery are being covered by the media is interesting.

Obesity is a dynamic, psychogenic-based, multi-component heterogeneous illness that is being treated with multiple surgical, medical and paramedical methods. Thus, disputes between disciplines on current clinical practice is inevitable. However, this situation does not necessitate publicizing the extreme downsides of a particular treatment method. The lesson learned from this situation is to realize where the negative results of the treatments we implement can lead to. Because the real problem will arise once the individuals we operate will start regaining weight or the diseases they got rid of will re-appear in the near future.

The problems currently being experienced is only the small part of the iceberg that is visible above the water, the real issue will arise once it will be implied that the treatment we are applying is not as effective as we think it is. In combat with this problem, not a single surgeon should think "I will re-operate again if he/she gains weight" or "will perform bypass if he/she gains weight". Because as each failing medical treatment affects patient compliance, patient compliance and expectations with respect to the operation are affected negatively by the undesirable consequences of any surgical procedure. More im-

Turkish Metabolic Surgery
Foundation, Istanbul, Turkey

Corresponding author

Alper Çelik
e-mail: doktoralper@hotmail.com

Received: 04.09.2015
Accepted: 26.10.2015

©Copyright 2016
by Turkish Surgical Association
Available online at
www.uluscerrahidergisi.org

portantly, some anatomical changes that occur after the initial surgery may make it impossible to apply additional surgical techniques appropriate for that patient. Perceiving malabsorption procedures as a savior only indicates our desperation on the subject. The first reason for this is that malabsorption itself is a disease that is described by the World Health Organization. Secondly, the patients with 'created' malabsorption will have limitation in their exercise capacity due to deficits in trace elements, calcium, and particularly iron, and will find their selves in the vicious circle before their operation, if not worse.

Every physician who provides services for Bariatric and Metabolic Surgery should think: "How is it that gastric bypass patients with 30 mL pouch and those with sleeve gastrectomy of 100-150 mL volume can be equivalent in terms of weight loss rate in the long-term, and how do these patients start to gain weight again after 3 years?". The reply to this question alone should be able to show that long-term success cannot be achieved by mechanical restriction.

Looking at the medium and long-term (5 and > 10 years) data, we see from the literature that effective and permanent weight loss is possible with techniques such as proximalising the ileum, bilio-pancreatic diversion (BPD) and duodenal switch (DS), ileal transposition (IT) and transit bipartition (TBI) (9-11). Although BPD, and to a lesser extent DS, cause serious malabsorption, this risk is acceptable for IT while it is minimal for TB. We need to identify to which patient, under which conditions, which type of surgery should be applied, immediately.

In order to overcome these problems, a multi-center, prospective study with international participation (Turkey, Australia, Netherlands, USA) is planned in our Foundation. The study named "HIPER-1" (Human Intestinal Peptides Evaluation & Research) aims to measure the activities of small intestine induced neuropeptides in healthy adults, in individuals with various metabolic disorders who did not undergo surgery, as well as in patients with different types of surgical procedures, and to establish a rating system based on these results. Detailed and current information on our study, which has completed the registration process to the Clinical Trials (www.clinicaltrials.gov) that is the official clinical trials database of the United

States Federal Government, will be announced from the Foundation's website. The first part of this study that is planned to continue for a long period is called HIPER-1, and we hope that the initial and following stages will be completed with contributions of the surgical community. Through this and similar studies, by acting together, we can offer important contributions both to our patients and our clinical practice, as well as the future of Bariatric and Metabolic Surgery.

REFERENCES

1. Guh DP, Zhang W, Bansback N, Amarsi Z, Birmingham CL, Anis AH. The incidence of co-morbidities related to obesity and overweight: a systematic review and meta-analysis. *BMC Public Health* 2009; 9: 88-111. [\[CrossRef\]](#)
2. Berrington de Gonzalez A, Hartge P, Cerhan JR, Flint AJ, Hannan L, MacInnis RJ, et al. Body-mass index and mortality among 1.46 million white adults. *N Engl J Med* 2010; 363: 2211-2219. [\[CrossRef\]](#)
3. Berghofer A, Pischon T, Reinhold T, Apovian CM, Sharma AM, Willich SN. Obesity prevalence from a European perspective: a systematic review. *BMC Public Health* 2008; 8: 200-215. [\[CrossRef\]](#)
4. Kaplan LM, Seeley RJ, Harris JL. Myths associated with obesity and bariatric surgery. *Bariatric Times* 2012; 9: 5-7.
5. The Diabetes Prevention Program (DPP). Description of lifestyle intervention. *Diabetes Care* 2002; 25: 2165-2171. [\[CrossRef\]](#)
6. Buchwald H, Estok R, Fahrenbach K, Banel D, Jensen MD, Pories WJ, et al. Weight and type 2 diabetes after bariatric surgery: systematic review and meta analysis. *Am J Med* 2009; 122: 248-256. [\[CrossRef\]](#)
7. Ochner CN, Gibson C, Shanik M, Goel V, Geliebter A. Changes in neurohormonal gut peptides following bariatric surgery. *Int J Obes (Lond)* 2011; 35: 153-166. [\[CrossRef\]](#)
8. Vetter ML, Cardillo S, Rickels MR, Iqbal N. Narrative review: effect of bariatric surgery on type 2 diabetes mellitus. *Ann Intern Med* 2009; 150: 94-103. [\[CrossRef\]](#)
9. Marceau P, Biron S, Marceau S, Hould F, Lebel S, Lescelleur O, et al. Long-term metabolic outcomes 5 to 20 years after biliopancreatic diversion. *Obes Surg* 2015; 25: 1584-1593. [\[CrossRef\]](#)
10. Cho EY, Kemmet O, Frenken M. Biliopancreatic diversion with duodenal switch in patients with type 2 diabetes mellitus: is the chance of complete remission dependent on therapy and duration of insulin treatment? *Obes Facts* 2011; 4: 18-23.
11. DePaula AL, Stival AR, DePaula CC, Halpern A, Vencio S. Surgical treatment of T2DM: Mid-term outcomes of LII-SG for the treatment of T2DM patients with BMI below 35. Analysis of 202 cases. *J Gastrointest Surg* 2012; 16: 967-976. [\[CrossRef\]](#)