

L. Genser · C. Barrat

## Bariatric Surgery versus Intensive Medical Therapy for Diabetes - 5-Year Outcomes

Schauwer et al (2017) NEJM [1]

**Background:** Long-term results from randomized, controlled trials that compare medical therapy with surgical therapy in patients with type 2 diabetes are limited.

**Methods:** We assessed outcomes 5 years after 150 patients who had type 2 diabetes and a body-mass index (BMI; the weight in kilograms divided by the square of the height in meters) of 27 to 43 were randomly assigned to receive intensive medical therapy alone or intensive medical therapy plus Roux-en-Y gastric bypass or sleeve gastrectomy. The primary outcome was a glycated hemoglobin level of 6.0% or less with or without the use of diabetes medications.

**Results:** Of the 150 patients who underwent randomization, 1 patient died during the 5-year follow-up period; 134 of the remaining 149 patients (90%) completed 5 years of follow-up. At baseline, the mean ( $\pm$ SD) age of the 134 patients was  $49\pm 8$  years, 66% were women, the mean glycated hemoglobin level was  $9.2\pm 1.5\%$ , and the mean BMI was  $37\pm 3.5$ . At 5 years, the criterion for the primary end point was met by 2 of 38 patients (5%) who received medical therapy alone, as compared with 14 of 49 patients (29%) who underwent gastric bypass (unadjusted  $P=0.01$ , adjusted  $P=0.03$ ,  $P=0.08$  in the intention-to-treat analysis) and 11 of 47 patients (23%) who underwent sleeve gastrectomy (unadjusted  $P=0.03$ , adjusted  $P=0.07$ ,  $P=0.17$  in

the intention-to-treat analysis). Patients who underwent surgical procedures had a greater mean percentage reduction from baseline in glycated hemoglobin level than did patients who received medical therapy alone (2.1% vs. 0.3%,  $P=0.003$ ). At 5 years, changes from baseline observed in the gastric-bypass and sleeve-gastrectomy groups were superior to the changes seen in the medical-therapy group with respect to body weight (-23%, -19%, and -5% in the gastric-bypass, sleeve-gastrectomy, and medical-therapy groups, respectively), triglyceride level (-40%, -29%, and -8%), high-density lipoprotein cholesterol level (32%, 30%, and 7%), use of insulin (-35%, -34%, and -13%), and quality-of-life measures (general health score increases of 17, 16, and 0.3; scores on the RAND 36-Item Health Survey ranged from 0 to 100, with higher scores indicating better health) ( $P<0.05$  for all comparisons). No major late surgical complications were reported except for one reoperation.

**Conclusions:** Five-year outcome data showed that, among patients with type 2 diabetes and a BMI of 27 to 43, bariatric surgery plus intensive medical therapy was more effective than intensive medical therapy alone in decreasing, or in some cases resolving, hyperglycemia. (Funded by Ethicon Endo-Surgery and others; STAMPEDE ClinicalTrials.gov number, NCT00432809.)

*Commentaires : Les résultats à 5 ans de cette étude randomisée étaient très attendus après publication des résultats à 1 et 3 ans dans le NEJM [2,3]. Cette étude confirme la tendance observée [4] : la sleeve et le bypass permettent d'obtenir une perte de poids importante et durable (en dépit d'une reprise pondérale plus importante après sleeve à 5 ans  $p = 0,02$ ), avec une amélioration de la qualité de vie ainsi qu'un contrôle équivalent des comorbidités métaboliques. Ces résultats contrastent avec ceux de la prise en charge médicale intensive et valident un peu plus la place de la chirurgie dans l'algorithme thérapeutique du diabète de type 2 comme récemment recommandé par le DSS-II [4]. L'indication métabolique de la chirurgie se détache un peu plus comme en témoigne une récente publication de la Cleveland Clinic à propos de 2 500 patients [5]. Dans cette large étude rétrospective monocentrique, la rémission des différentes comorbidités métaboliques apparaissait dissociée et indépendante de la perte pondérale. Les nouvelles guidelines européennes concernant la chirurgie*

L. Genser (✉)

AP-HP, Service de chirurgie hépato-bilio-pancréatique, transplantation hépatique, Groupe Hospitalier Pitié Salpêtrière Institut de Cardiométabolisme et nutrition, Institute of Cardiometabolism and Nutrition, ICAN, UMR 1166\_équipe 6. Pitié-Salpêtrière Hospital, 75013 Paris, France  
e-mail : Laurent.genser@aphp.fr

C. Barrat (✉)

AP-HP, Service de chirurgie digestive et métabolique, Hôpital Avicenne, Assistance- Publique Hôpitaux de Paris (AP-HP), Centre Intégré Nord Francilien de l'Obésité, 125 rue de Stalingrad, 93000 Bobigny, France. Université Paris 13I-UFR SMBH "Léonard de Vinci", France  
e-mail : Christophe.barrat@aphp.fr

métabolique seront présentées à l'occasion du prochain congrès de l'European Congress on Obesity (ECO) en mai prochain à Porto et intégreront ces dernières données.

## Mechanisms, Pathophysiology, and Management of Obesity

Heymsfield et al (2017) NEJM [6]

Seven of the top 10 leading causes of death and disability in the United States today are chronic diseases (e.g., cancer and diabetes).<sup>1</sup> Prevention and treatment of most of these conditions must address the close link with obesity. People who are overweight or obese account for more than two thirds of the U.S. population<sup>1</sup> and are overrepresented in primary care practices.<sup>2</sup> Some professional organizations now classify obesity, defined as a body-mass index (BMI, the weight in kilograms divided by the square of the height in meters) of 30 or higher, as a disease.<sup>3</sup> Management of overweight (BMI,  $\geq 25$ ) or obesity in the clinical setting, alone or in combination with a chronic disease, is the focus of this review.

*Commentaires : Il est difficile de trouver des « comprehensive review » sur l'obésité, comme toujours celles du NEJM sont remarquables et celle-ci n'échappe pas à la règle. Tous les aspects épidémiologiques, physiopathologiques sont abordés. Les principes de la prise en charge médicale et chirurgicale sont également présentés. A lire absolument !*

## Mastery in Bariatric Surgery: The Long-term Surgeon Learning Curve of Roux-en-Y Gastric Bypass

Doumouras et al (2017) Ann Surg [7]

*Objective:* To determine the effect of cumulative volume on all-cause morbidity and operative time.

*Background:* Gastric bypass is an important public health procedure, but it is difficult to master with little data about how surgeon cumulative volume affects outcomes longitudinally.

*Methods:* This was a longitudinal study of 29 surgeons during the first 6 years of performing bariatric surgery in a high-volume, regionalized center of excellence system. Cumulative volume was determined using date and time of the procedure. Cumulative volume was analyzed in blocks of 75 cases. The main outcome of interest was all-cause morbidity during the index admission and the secondary outcome was operative time.

*Results:* Overall, 11,684 gastric bypasses were performed by 29 surgeons at 9 centers of excellence. The overall

morbidity rate was 10.1% and short-term outcomes were related significantly to cumulative volume. Perioperative risk plateaued after approximately 500 cases and was lowest for surgeons who had completed more than 600 cases (odds ratio 0.53 95% confidence interval 0.26-0.96  $P = 0.04$ ) compared to the first 75 cases. Operative time also stabilized after approximately 500 cases, with an operative time 44.7 minutes faster than surgeons in their first 75 cases (95% confidence interval 37.0-52.4 min  $P < 0.001$ ).

*Conclusions:* The present study demonstrated the clear, substantial influence of surgeon cumulative volume on improved perioperative outcomes and operative time. This finding emphasizes role of the individual surgeon in perioperative outcomes and that the true learning curve needed to master a complex surgical procedure such as gastric bypass is longer than previously thought, in this case requiring approximately 500 cases to plateau.

*Commentaires : Très peu d'études ont évalué à long terme la courbe d'apprentissage du bypass. La force de ce travail réside dans le nombre de chirurgiens évalués ( $n = 29$ ) ; la multiplicité et la qualité des centres ; le nombre de patients inclus ainsi que la durée d'étude. Au total la morbidité du bypass était améliorée à partir de 500 bypass par chirurgien mais était également dépendante de facteurs organisationnels. En effet, en analyse univariée la survenue de complications était dépendante du volume opératoire du chirurgien (plus de complications chez les chirurgiens opérant peu), du type de centre (volume annuel ; centre universitaire) avec plus de complications dans les centres universitaires et à haut volume. Ces données posent question sur la qualité de la formation dispensée aux jeunes chirurgiens et valident les résultats de la Cleveland Clinic publiés en 2016 dans Obesity Surgery [8]. Le chirurgien en formation est donc un facteur de risque de complication. Cela démontre la nécessité de renforcer les programmes de formation en chirurgie bariatrique pour 1) que la formation des jeunes chirurgiens ne se fasse pas au détriment de la sécurité des patients et 2) diminuer cette courbe d'apprentissage et ses conséquences sur la morbidité. Les actions du club SOFFCO-jeune sous l'égide de la SOFFCO-MM vont dans ce sens*

## Guidelines for Perioperative Care in Bariatric Surgery: Enhanced Recovery After Surgery (ERAS) Society Recommendations.

Thorell A et al World J surg (2016) [9]

*Commentaires : La rehabilitation précoce ou « Fast track » constitue un nouveau standard en chirurgie digestive [10]. Ces mesures permettent d'optimiser le parcours*

*du patient, les soins péri-opératoires et d'accélérer le retour à l'autonomie avec une diminution des durées d'hospitalisation sans augmenter le profil de morbi-mortalité chirurgicale. Ces recommandations font ainsi la synthèse des différentes mesures péri-opératoires utilisées et validées nécessaires à la bonne pratique de la réhabilitation précoce en chirurgie bariatrique. Cependant leur impact sur la qualité de vie et les bénéfices économiques de ces stratégies restent à démontrer.*

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