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REGGIO EMILIA

18 APRILE 2026

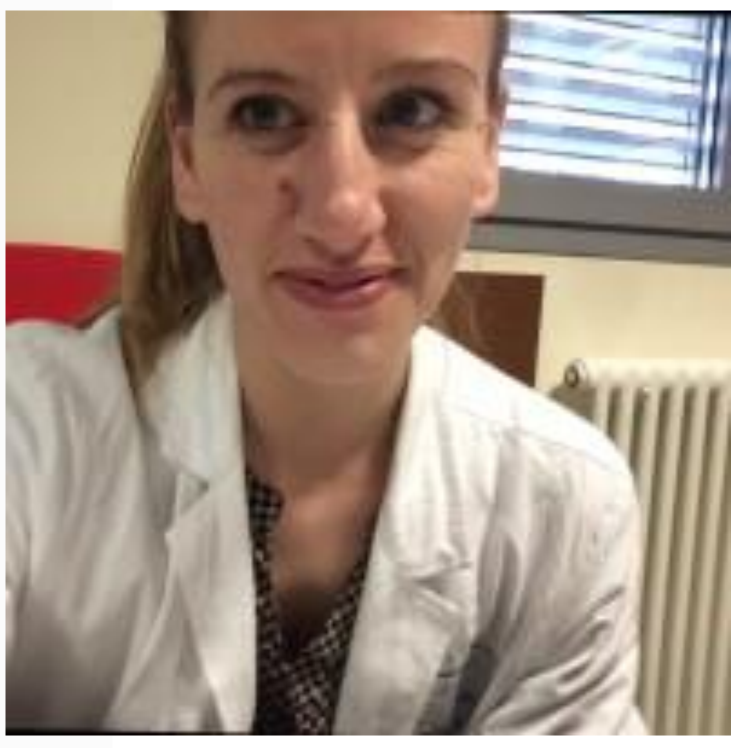
Obesità e trapianto d'organo: il ruolo della chirurgia bariatrica

PROF. FEDERICO MARCHESI

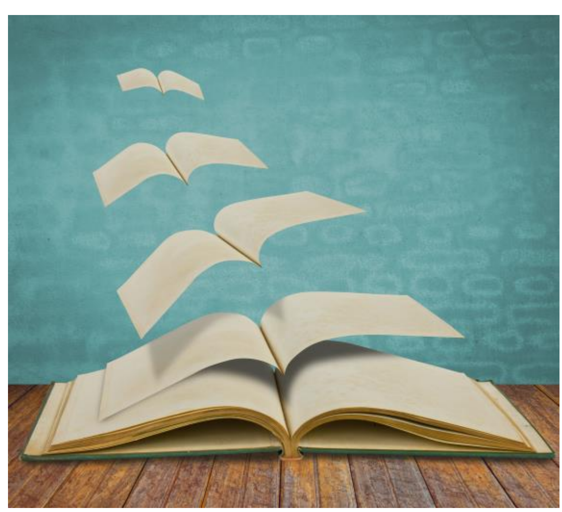
DIRETTORE UOC CHIRURGIA GENERALE E ALTE VIE DIGERENTI

AOU PARMA

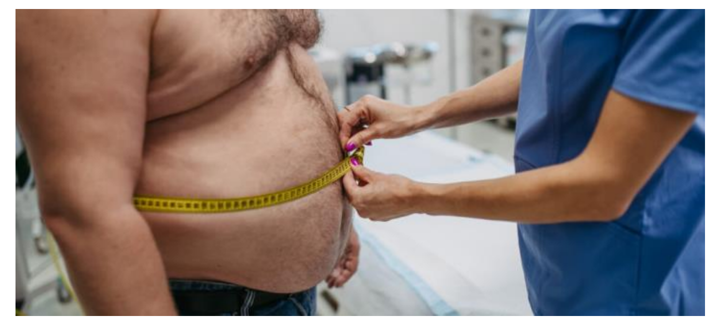
Disclosures (and disclaimers)…



Background



- ✓ Almost **35%** of kidney transplant recipients were obese in 2018 (25% in 2000).
- ✓ Obesity is is strongly associated with **worse patient outcome** and graft survival after organ transplantation (eg acute rejection, inferior or delayed graft function, increase SSI, increased surgical complications, prolonged hospital stay, and costs).
- ✓ Most transplant centers endorse using **BMI cutoffs** for transplant **listing**.
- ✓ Current guidelines recommend interventions to promote **weight loss** to achieve a lower BMI prior to transplantation.



BS in end-stage organ disease

- **Increasingly reports** about BS in patients with end-stage organ diseases (kidney, liver, lung, heart, pancreas).
- BMI ≥40 kg/m², or with BMI ≥35 kg/m² in presence of a major obesity-related comorbidities
- The timing of BS can be:

  - before transplantation to improve **eligibility** for listing (**bridge to transplant**), and transplant **outcomes**

  - after transplantation to manage metabolic complications, and improve graft survival

  - simultaneous to transplantations, in highly selected patients

The American Journal of Surgery 220 (2020) 566–579

Contents lists available at ScienceDirect

The American Journal of Surgery

journal homepage: www.americanjournalofsurgery.com

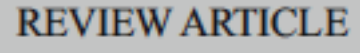
ELSEVIER

Review Article

Bariatric surgery to achieve transplant in end-stage organ disease patients: A systematic review and meta-analysis

Babak J. Orandi [a, *, 1], Joshua W. Purvis [a, 1], Robert M. Cannon [a], A. Blair Smith [b], Cora E. Lewis [c, d], Norah A. Terrault [e], Jayme E. Locke [a]

OBES SURG (2017) 27:2696–2706
DOI 10.1007/s11695-017-2854-8



REVIEW ARTICLE

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The Role of Bariatric Surgery in Abdominal Organ Transplantation—the Next Big Challenge?

Tomasz Dziodzio [1] · Matthias Biebl [1] · Robert Öllinger [1] · Johann Pratschke [1] · Christian Denecke [1]

IFSO/ASMBS Guidelines

- Obesity is **associated** with end-stage organ disease and may limit access to transplantation. Obesity is also a **relative contraindication** for solid organ transplantation and poses unique **technical challenges** during surgery.
- Published data supports considering patients with end-stage **renal** disease and obesity grade 3 being able to be listed for kidney transplant after MBS.
- MBS is shown to be safe and effective as a bridge to **liver** transplantation in selected patients who would otherwise be ineligible.
- MBS can also improve **heart** transplants outcomes.
- Limited data suggest that MBS could improve eligibility for **lung** transplantation.
- MBS can be performed **post**-solid organ transplantation or **concomitantly** to reduce complication rates and mortality.

Obesity Surgery (2024) 34:3963–4096
https://doi.org/10.1007/s11695-024-07370-7

ORIGINAL CONTRIBUTIONS

Scientific Evidence for the Updated Guidelines on Indications for Metabolic and Bariatric Surgery (IFSO/ASMBS)

Maurizio De Luca[1] · Scott Shikora[2] · Dan Eisenberg[3] · Luigi Angrisani[4] · Chetan Parmar[5] · Aayed Alqahtani[6] · Ali Aminian[7] · Edo Aarts[8] · Wendy Brown[9] · Ricardo V. Cohen[10] · Nicola Di Lorenzo[11] · Silvia L. Faria[12] · Kasey P. S. Goodpaster[13] · Ashraf Haddad[14] · Miguel Herrera[15] · Raul Rosenthal[16] · Jacques Himpens[17] · Angelo Iossa[18] · Mohammad Kermansaravi[19] · Lilian Kow[20] · Marina Kurian[21] · Sonja Chiappetta[22] · Teresa LaMasters[23] · Kamal Mahawar[24] · Giovanni Merola[25] · Abdelrahman Nimeri[2] · Mary O'Kane[26] · Pavlos Papasavas[27] · Giacomo Piatto[28] · Jaime Ponce[29] · Gerhard Prager[30] · Janey S. A. Pratt[3] · Ann M. Rogers[31] · Paulina Salminen[32] · Kimberley E. Steele[33] · Michel Suter[34] · Salvatore Tolone[35] · Antonio Vitiello[36] · Marco Zappa[37] · Shanu N. Kothari[38]

BS and Kidney transplant

- Morbid obesity is a problem for kidney transplantation due to inferior outcomes, including higher rates of new-onset diabetes after transplantation (NODAT), delayed graft function (DGF), and graft failure.
- Morbidly obese patients with end-stage renal disease who undergo LSG to improve transplant candidacy, achieve excellent post transplantation outcomes.
- Mainly single-center series, reporting between 8 and 50 patients.

OBES SURG
DOI 10.1007/s11695-017-2722-6

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ORIGINAL CONTRIBUTIONS

Bariatric Surgery as a Bridge to Renal Transplantation in Patients with End-Stage Renal Disease

Shadi Al-Bahri[1] · Tannous K. Fakhry[1] · John Paul Gonzalvo[1] · Michel M. Murr[1]

BS and Kidney transplant

OBES SURG (2017) 27:2696–2706
DOI 10.1007/s11695-017-2854-8

REVIEW ARTICLE

The Role of Bariatric Surgery in Abdominal Organ Transplantation—the Next Big Challenge?

Tomasz Dziodzio[1] · Matthias Biebl[1] · Robert Öllinger[1] · Johann Pratschke[1] · Christian Denecke[1]

- ✓ SG was the preferred procedure before KT, because o f the limited problems associated with drugs and nutrients absorption.
- ✓ SG superior to RYGB in regard to mortality and morbidity.

BS before KT was associated with high complication rates, in particular after GB.

Surgery for Obesity and Related Diseases 16 (2020) 10–14

SURGERY FOR OBESITY AND RELATED DISEASES

Original article

Kidney transplantation after sleeve gastrectomy in the morbidly obese candidate: results of a 2-year experience

Young Kim, M.D., Amanda J. Bailey, D.O., Mackenzie C. Morris, M.D., Al-Faraaz Kassam, M.D., Shimul A. Shah, M.D., M.H.C.M., Tayyab S. Diwan, M.D.*

Cincinnati Collaborative for Obesity Research (CCORE), Department of Surgery, University of Cincinnati College of Medicine, Cincinnati, Ohio

American Journal of Transplantation

Volume 18, Issue 2, February 2018, Pages 410-416

ORIGINAL ARTICLE

Laparoscopic sleeve gastrectomy improves renal transplant candidacy and posttransplant outcomes in morbidly obese patients

Y. Kim[1], A.D. Jung[1], V.K. Dhar[1], J.S. Tadros[1], D.P. Schauer[1], E.P. Smith[1], D.J. Hanseman[1], M.C. Cuffy[1], R.R. Alloway[1], A.R. Shields[1], S.A. Shah[1], E.S. Woodle[1], T.S. Diwan[1]

ELSEVIER

Surgery for Obesity and Related Diseases ∎ (2017) 00–00

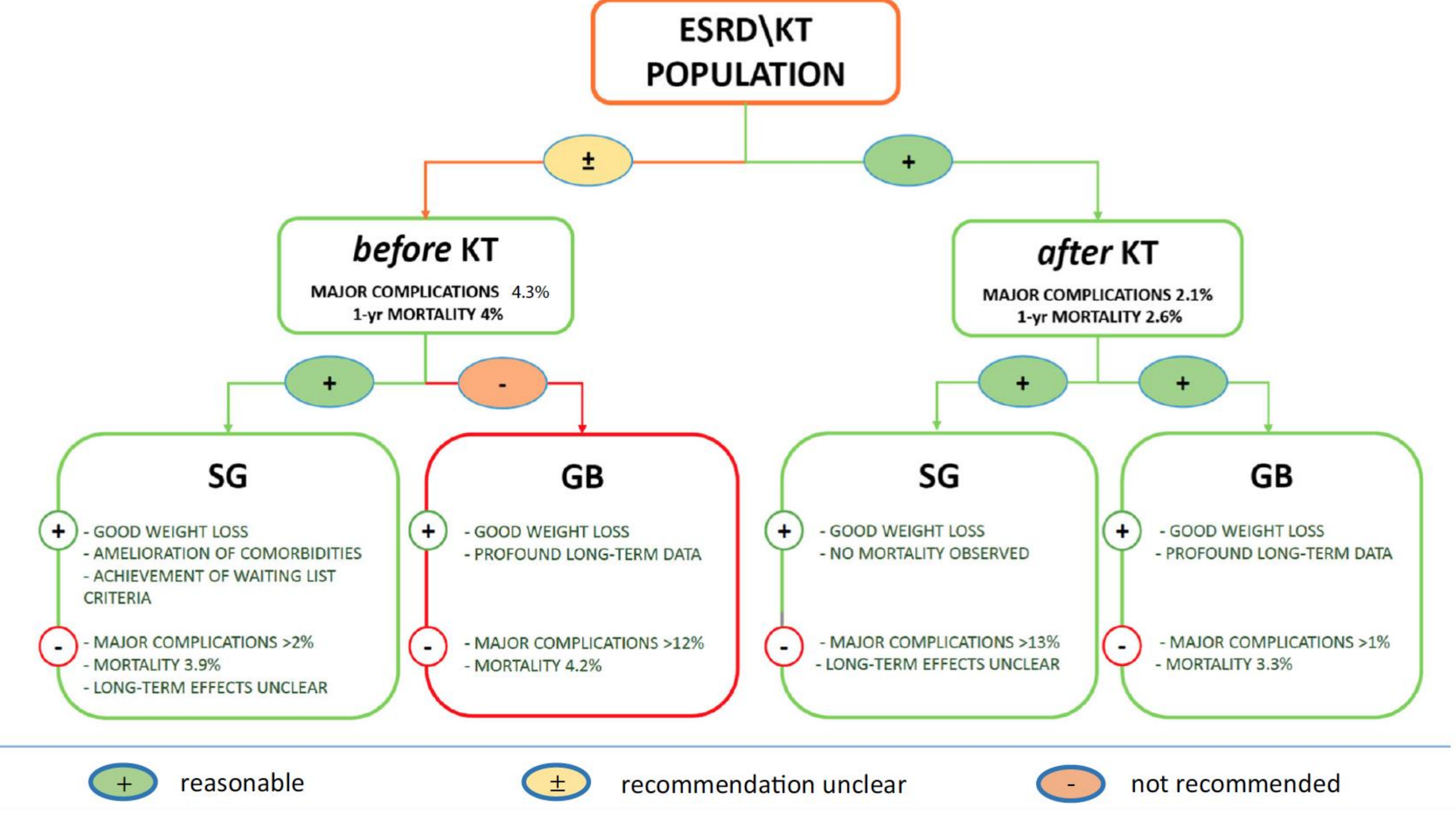
SURGERY FOR OBESITY AND RELATED DISEASES

Original article

Laparoscopic sleeve gastrectomy: gateway to kidney transplantation

Katrin Kienzl-Wagner, M.D., Annemarie Weissenbacher, M.D., Philipp Gehwolf, M.D., Heinz Wykypiel, M.D., Dietmar Öfner, M.D., Stefan Schneeberger, M.D.*

BS and Kidney transplant



BS and Liver transplant

- **Strict indications**, after accurate evaluation of liver cirrhosis severity
- However, BS prior to LT is associated with **high morbidity and mortality**
- **SG** is the preferred surgical option because enables the accessibility to the biliary tract
- Major complication rate after SG was **17.9%**
- Three groups reported BS *simultaneously* with LT in 11 patients

OBES SURG (2017) 27:2696–2706
DOI 10.1007/s11695-017-2854-8

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REVIEW ARTICLE

The Role of Bariatric Surgery in Abdominal Organ Transplantation—the Next Big Challenge?

Tomasz Dziodzio[1] · Matthias Biebl[1] · Robert Öllinger[1] · Johann Pratschke[1] · Christian Denecke[1]

ORIGINAL ARTICLES: PRETRANSPLANT ASSESSMENT AND CONDITIONS

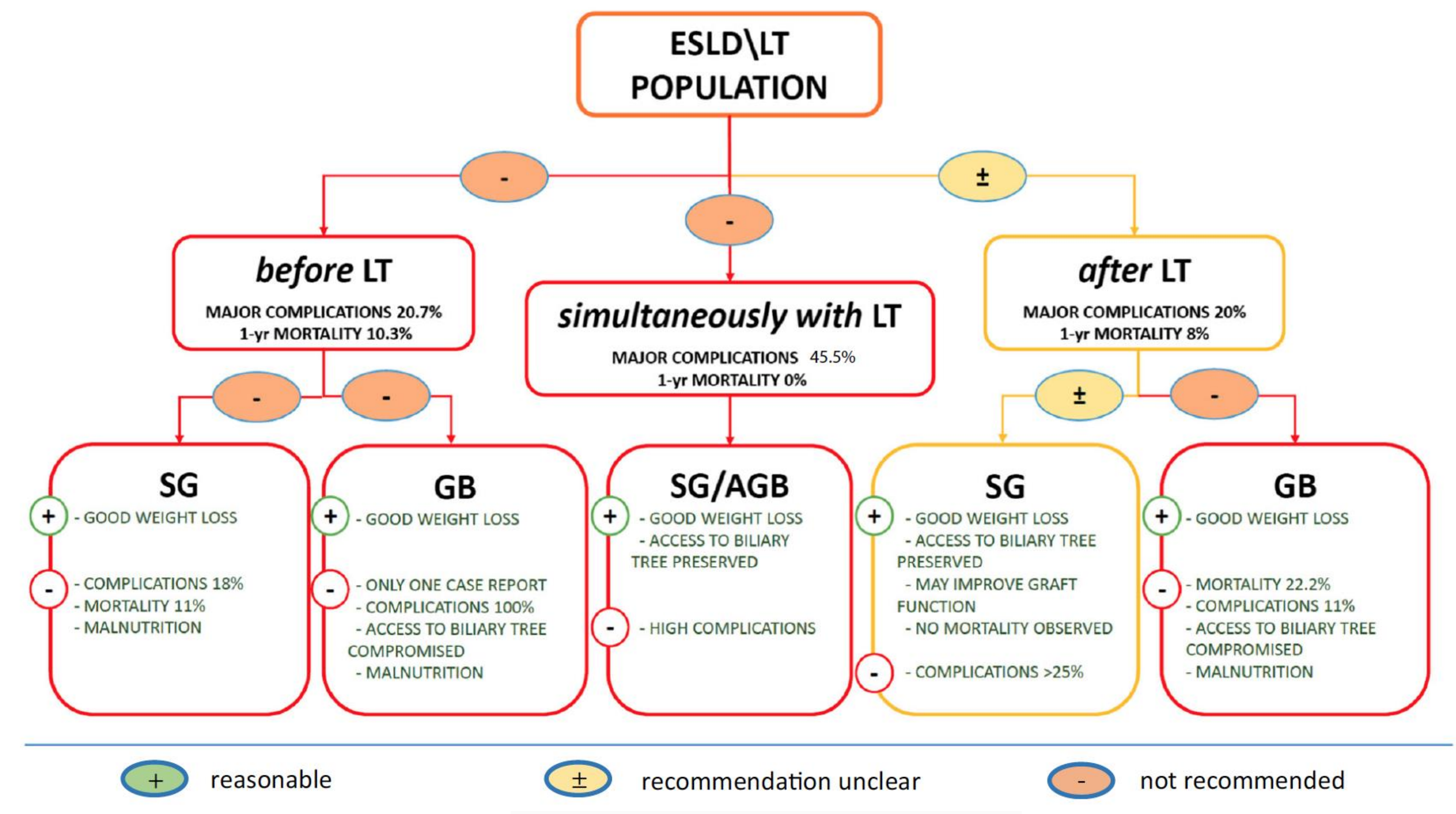
Outcomes of Sleeve Gastrectomy in Obese Liver Transplant Candidates

Sharpton, Suzanne R.[1]; Terrault, Norah A.[1]; Posselt, Andrew M.[*,2]

Author Information

Liver Transplantation 25(4):p 538-544, April 2019. | *DOI:* 10.1002/lt.25406

BS and Liver transplant



BS and Heart transplant

- SG resulted in sufficient weight loss for cardiac transplantation
- SG resulted in significant improvement in cardiac ejection fraction
- Small case series

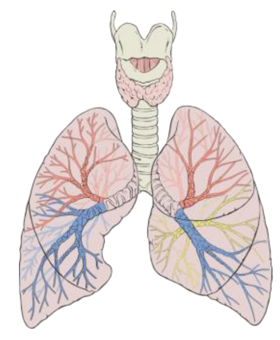
Surgery for Obesity and Related Diseases
Volume 14, Issue 9, September 2018, Pages 1269-1273

Original article

Laparoscopic sleeve gastrectomy in patients with heart failure and left ventricular assist devices as a bridge to transplant

Russell B. Hawkins M.D., Kristina Go M.D., Steven L. Raymond M.D., Alexander Ayzengart M.D., Jeffrey Friedman M.D.

BS and Lung transplant



BS for obesity treatment in patients with advanced lung diseases may improve their LT candidacy without compromising early and mid-term transplant outcomes.

Obesity Surgery (2025) 35:2436–2444
https://doi.org/10.1007/s11695-025-07932-3

RESEARCH

Check for updates

Bariatric Surgery and Lung Transplant Outcomes: Case Series and Insights from a Propensity-Matched Analysis at a High-Volume Transplant Center

Andrés Latorre-Rodriguez[1,2] · Mark Shacker[3] · Hesham Mohamed[1,4] · Ross M. Bremner[1,3] · Sumeet K. Mittal[1,3]

Received: 8 April 2025 / Revised: 9 May 2025 / Accepted: 13 May 2025 / Published online: 28 May 2025
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Surgical Endoscopy
https://doi.org/10.1007/s00464-018-6475-7

2018 SAGES ORAL

Bariatric surgery in patients with interstitial lung disease

Jessica Ardila-Gatas[1] · Gautam Sharma[1] · Zubaidah Nor Hanipah[1,2] · Chao Tu[3] · Stacy A. Brethauer[1] · Ali Aminian[1] · Leslie Tolle[4] · Philip R. Schauer[1]

Received: 22 April 2018 / Accepted: 20 September 2018
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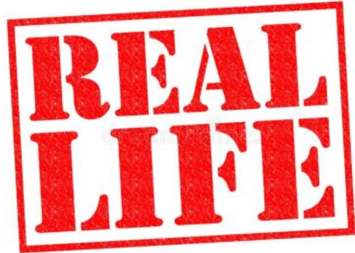
Case 1



- Case I
- Male patient, age 48, BMI 38.8; HTA. End-stage renal disease with the necessity of dialysis treatment
- Ineffective weight lost with diet. After adequate preoperative multidisciplinary assessment, the patient was candidate for LSG at our department
- POD 1 severe hypotension → CT SCAN (hemoperitoneum)→ immediate Laparoscopic revisional surgery (short gastric vessel)
- Admission in ICU, Inotrops,
- POD 3: shock. Revisional surgery → bowel ischemia → bowel resection +right colectomy +cholecystectomy+ ileostomy.
- POD 4 Multiorgan failure and death

Case 1

- Legal dispute

- I grade: CTU → Wrong indication, better BIB(?!)

Judge: absolution

Case 2

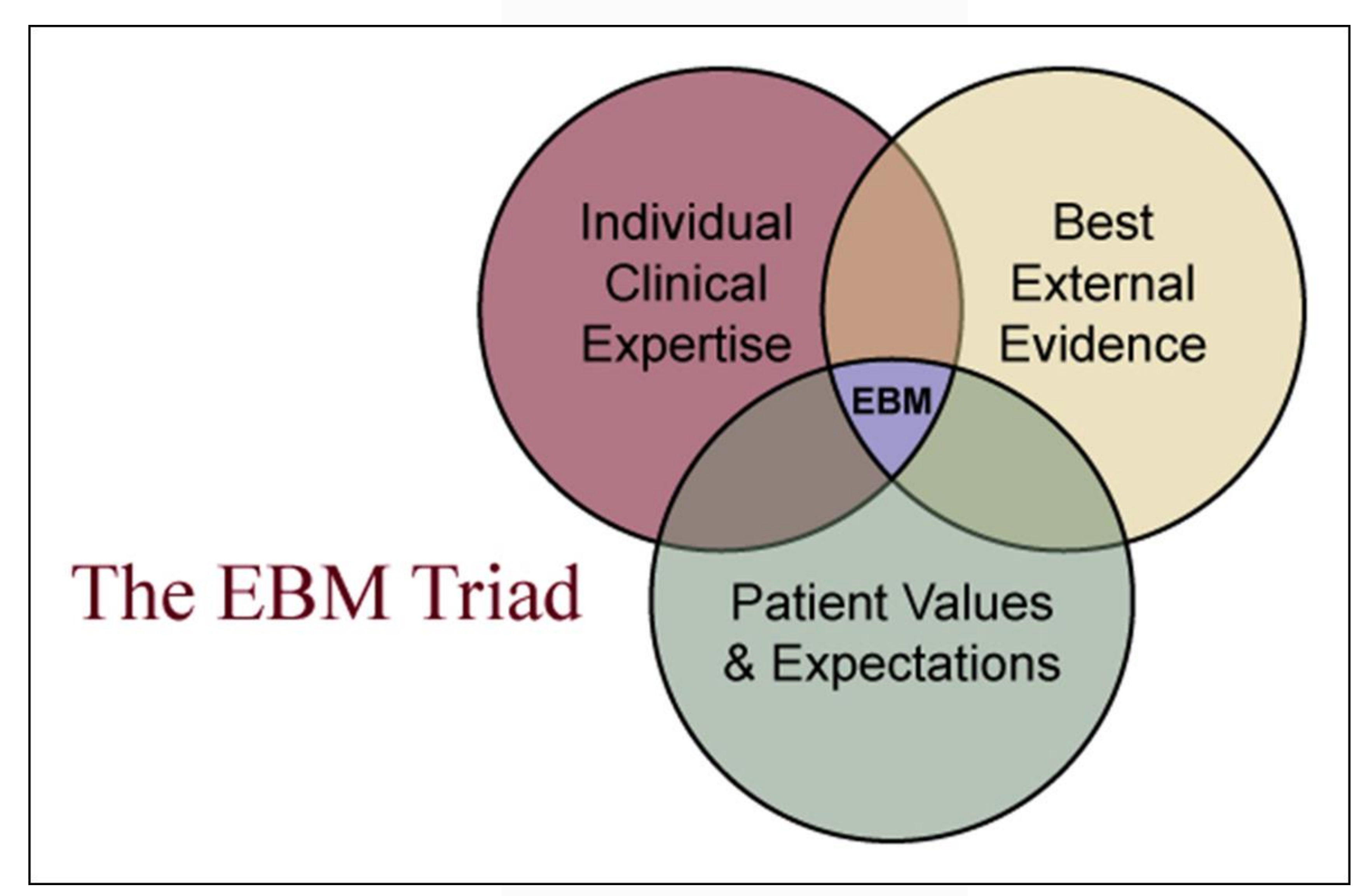
- Male, age 63, male, LSG performed in another bariatric center, prior to elegibility to kidney transplant (end-stage kidney disease);
- discharge on POD 2
- POD 12: admission to our surgical department for fever and abdominal pain → CT scan → gastric staple line leak
- Laparoscopic surgical revision with drainage, no evidence of leak with methylene blue test
- POD 15: Endoscopic placement of esophagogastric **stent**
- POD 22: Percutaneous **drainage** of abdominal collection
- Initial improvement of clinical conditions, followed by subsequent deterioration → endoscopy evidence of double staple line leak

Case 2

- POD 34: Surgical revision with damage-control surgery, total laparoscopic gastrectomy and transhiatal transesection of distal esophagus under endoscopic control
- after almost one month, staple line esophageal leak c
- laparoscopic revision, no leak confirmation, placement of jejunostomy tube
- After 10 days, left fibrinous peritonitis in left flank, laparotomic conversion, no evidence of leak (colonoscopy control)
- Worsening of clinical conditions → MOF → death (after almost 80 days post sleeve gastrectomy).

Conclusions

- ✓ Overall, all studies can considered to be at high risk of bias given their study design, generally **small sample sizes, retrospective nature, limited outcome reporting**.
- ✓ Surgery should be performed in center provided with **both** bariatric and transplant surgery **units**.
- ✓ **Selected** cases of **renal** transplant, only after adequate multidisciplinary assessment
- ✓ Technical/nutritional issues


Individual
Clinical
Expertise
Best
External
Evidence
EBM
Patient Values
& Expectations
The EBM Triad

Conclusions

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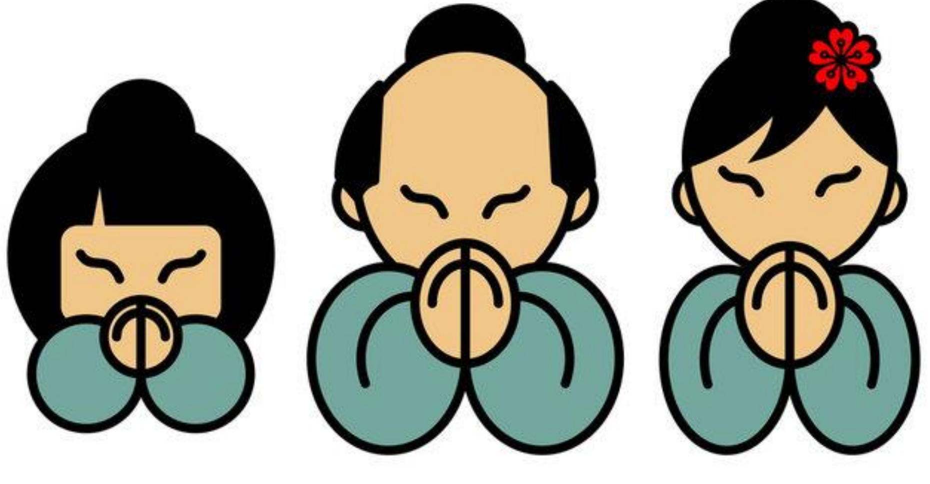

Tnks!!