IFSO
International Federation for Surgery of Obesity & Metabolic Disorders

S.I.C.OB. Società Italiana di Chirurgia dell'Obesità e delle malattie metaboliche

IFSO
NAPOLI
2023

XXVI IFSO WORLD CONGRESS
OF BARIATRIC & METABOLIC SURGERY

NAPOLI, ITALY | Mostra d'Oltremare
30 AUGUST - 1 SEPTEMBER, 2023

Congress President: Prof. Luigi Angrisani

IFSO
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THURSDAY, 31 AUGUST

MEDITERRANEO BUILDING
ROOM ITALIA

ORGAN TRANSPLANTATION: LIVER, KIDNEY, HEART, LUNG. NEW ASMBS/IFSO GUIDELINES
08.30 - 10.00
Chair: Marina Kurian (USA)
Moderators: Marco Bueter (Switzerland), Roberto Troisi (Italy)

Systematic Review for the new ASMBS/IFSO Guidelines

Angelo Iossa MD PhD
Researcher of Sapienza University of Rome
Head of Bariatric Surgery Service- Icot Hospital-Latina

NO DISCLOSURE

2022 American Society of Metabolic and Bariatric Surgery (ASMBS) and International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO) Indications for Metabolic and Bariatric Surgery

Dan Eisenberg[1] · Scott A. Shikora[2] · Edo Aarts[3] · Ali Aminian[4] · Luigi Angrisani[5] · Ricardo V. Cohen[6] · Maurizio de Luca[7] · Silvia L. Faria[8] · Kasey P.S. Goodpaster[4] · Ashraf Haddad[9] · Jacques M. Himpens[10] · Lilian Kow[11] · Marina Kurian[12] · Ken Loi[13] · Kamal Mahawar[14] · Abdelrahman Nimeri[15] · Mary O'Kane[16] · Pavlos K. Papasavas[17] · Jaime Ponce[18] · Janey S. A. Pratt[1,19] · Ann M. Rogers[20] · Kimberley E. Steele[21] · Michel Suter[22,23] · Shanu N. Kothari[24]

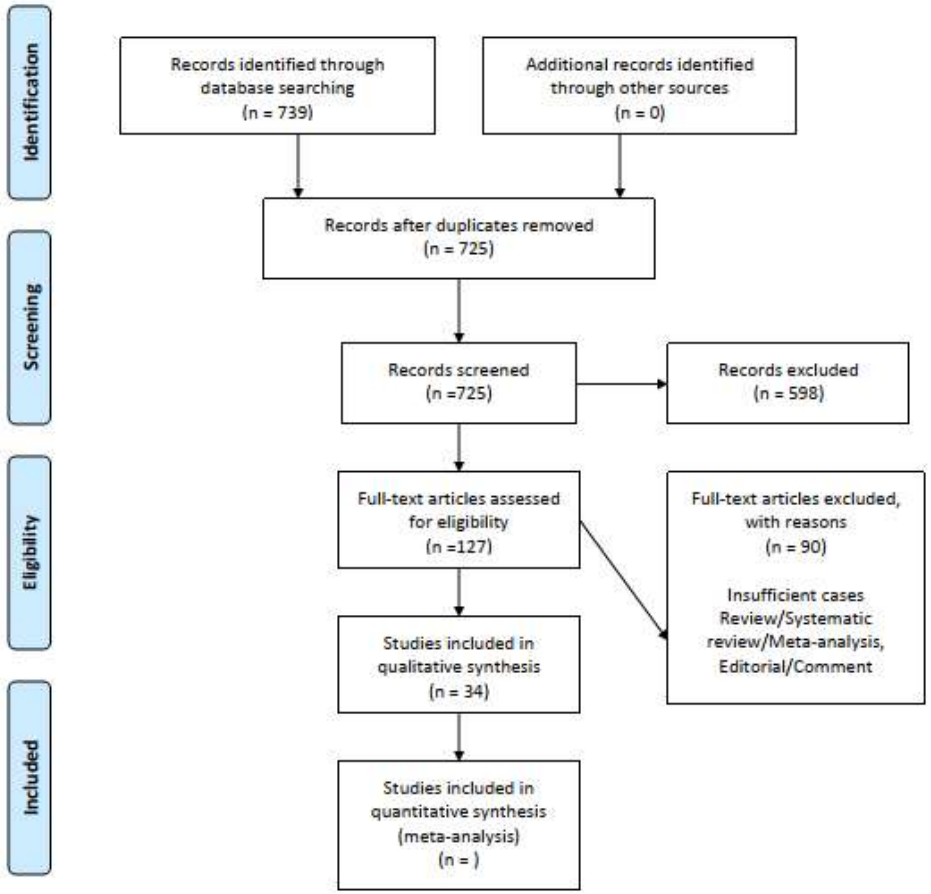
- *MBS is an effective treatment of clinically severe obesity in patients who need other specialty surgery, such as joint arthroplasty, abdominal wall hernia repair, or organ transplantation.*

Organ transplantation

Class III obesity is associated with end-stage organ disease and may limit the access to transplantation of the patient with obesity, since it is a relative contraindication for solid organ transplantation and poses specific technical challenges during surgery. Conversely, MBS may be overlooked as an option in patients with severe end-stage organ disease. Nonetheless, MBS has been described in patients with end-stage organ disease as a way to improve their candidacy for transplantation. Patients with endstage organ disease can achieve meaningful weight loss and improve their eligibility to receive an organ transplant [78]. Studies suggest that more than 50% of patients with end-stage renal disease (ESRD) and morbid obesity are able to be listed for kidney transplant within 5 years after MBS [79]. Similarly, MBS is shown to be safe and effective as a bridge to liver transplantation in selected patients who would otherwise be ineligible [80, 81]. Heart transplant candidacy can also be improved by MBS, and reports in some patients demonstrate significant improvement in left ventricular ejection fraction after surgery to remove the requirement for transplantation [82, 83]. MBS has been shown to be safe and effective in patients with heart failure and a left ventricular assist device (LVAD). McElderry et al. [84] demonstrated in a study of 2798 patients who underwent LVAD implantation that a history of prior MBS was associated with a 3- fold higher probability of heart transplantation in follow-up, compared with patients who did not have MBS. In addition, limited data suggest that patients with obesity and end-stage lung disease may lose sufficient weight after MBS to achieve listing for transplantation [85].

Search: (organ transplantation) OR (solid organ transplantation) OR (liver transplantation) OR (kidney transplantation) OR (heart lung transplantation) AND (bariatric surgery)

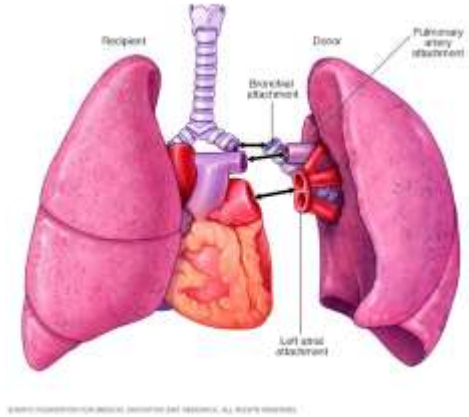
PRISMA 2009 Flow Diagram:
Solid Organ Transplant and MBS



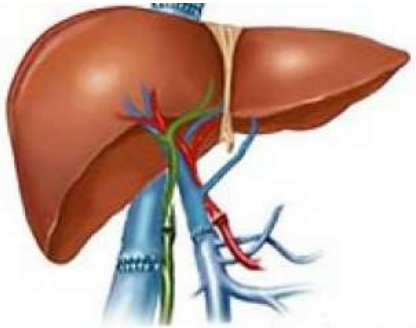
From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *Preferred Reporting Items for Systematic Reviews and Analyses: The PRISMA Statement.* PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit www.prisma-statement.org.

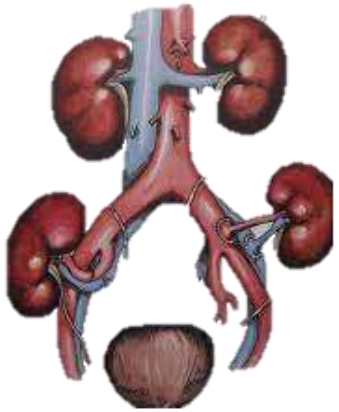
SETTING



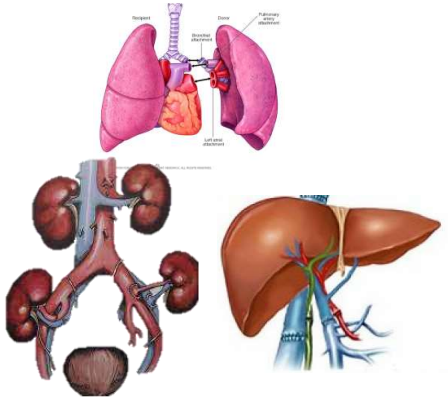
Heart-Lung transplant



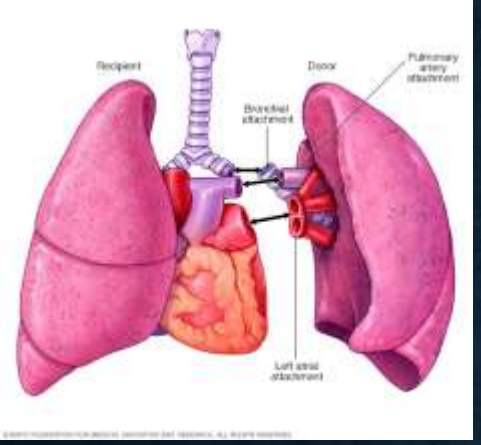
Liver transplant



Kidney transplant



Mixed procedures



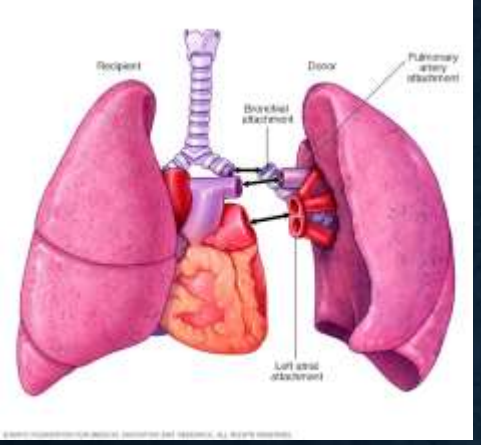
Heart-Lung transplant

Val FRD, et al. J Card Fail. 2020 Nov;26(11):944-947. doi: 10.1016/j.cardfail.2020.04.020. Epub 2020 May 16. PMID: 32428670.

26 pts no BMI target
42% reach BMI target at 6 M post MBS
27% transplanted
Mortality 3.8%

McElderry B, et al. J Heart Lung Transplant. 2022 Jul;41(7):914-918. doi: 10.1016/j.healun.2022.04.003. Epub 2022 Apr 10. PMID: 35537903

2798 pts with LVAD
Pts with previous MBS----3fold higher probability to be transplanted



Heart-Lung transplant

Before: MBS improve the possibility to be transplanted

Liver transplant

Concomitant MBS + LT

Zamora-Valdes D, et al. Hepatology. 2018
SG + LT, 36 M FU, no impact on p.o. complications/mortality

MBS after LT

Chierici A. et al. Obes Surg. 2022 Aug;32(8):2548-2555. doi: 10.1007/s11695-022-06120-x. Epub 2022 Jun 6. PMID: 35668279
20 pts, 10% mortality (during FU period), longer hospital stay and higher costs/re-hospitalization

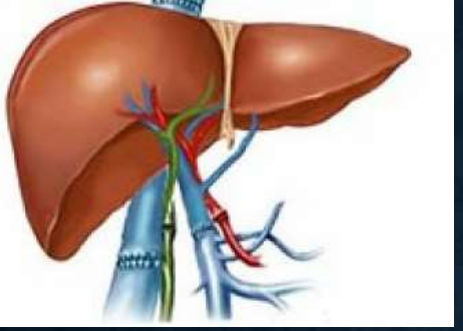
MBS before LT

Idriss R, et al. Liver Transpl. 2019 Feb;25(2):217-227. doi: 10.1002/lt.25368. PMID: 30369002.

78 pts (63% GBP), no mortality difference compared with no MBS group, higher malnutrition rate

Morris MC, et al. Liver Transpl. 2019 Nov;25(11):1673-1681. doi: 10.1002/lt.25637. Epub 2019 Oct 15. PMID: 31518478
15 pts, 0% mortality rate, no allograft rejection
Sharpton SR, et al. Liver Transpl. 2019 Apr;25(4):538-544. doi: 10.1002/lt.25406. Epub 2019 Mar 12. PMID: 30588743; PMCID: PMC6535047.
32 pts, SG, mortality rate 0, 88% eligible for LT
Serrano OK,et al. Transplantation. 2021 Jun 1;105(6):1280-1284. doi: 10.1097/TP.0000000000003378. PMID: 32590608.
33 pts, mortality rate and complications rate not different from no MBS population
Iannelli A, et al. Obes Surg. 2022 Jan;32(1):55-63. doi: 10.1007/s11695-021-05684-4. Epub 2021 Sep 9. PMID: 34499293; PMCID: PMC8752569.
39 pts, no association between death, re-hospitalization, re-transplantation and MBS

Lin MY, et al. Surg Obes Relat Dis. 2013 Sep-Oct;9(5):653-8. doi: 10.1016/j.soard.2013.02.013. Epub 2013 Mar 21. PMID: 23701857.
26 pts, 30% succesfully transplanted. Complications rate 25%

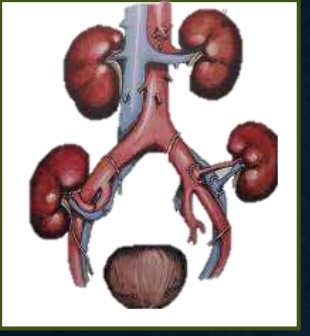


Liver transplant

Concomitant: only a cs..feasible with SG

After: higher costs due to longer hospitalization, higher risk

Before: better option..listed pts range 40-88 %..succesfully transplanted til 30%



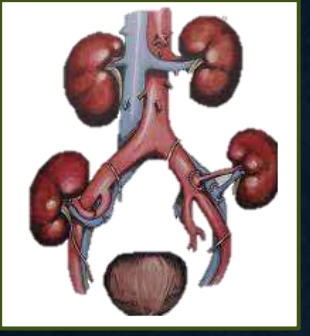
Kidney transplant

MBS before KT

1. Jamal MH, et al. Surg Obes Relat Dis. 2015 Mar-Apr;11(2):419-23. doi: 10.1016/j.soard.2014.09.022. Epub 2014
2. Mozer AB, et al Obes Surg. 2015 Nov;25(11):2088-92. doi: 10.1007/s11695-015-1656-0.
3. Freeman CM, et al. Am J Transplant. 2015 May;15(5):1360-8. doi: 10.1111/ajt.13116. Epub 2015 Feb 23.
4. Al-Bahri S, et al. Obes Surg. 2017 Nov;27(11):2951-2955. doi: 10.1007/s11695-017-2722-6.
5. Kim Y, et al. Am J Transplant. 2018 Feb;18(2):410-416. doi: 10.1111/ajt.14463. Epub 2017 Sep 12.
6. Thomas IA, et al. Clin Transplant. 2018 May;32(5):e13232. doi: 10.1111/ctr.13232. Epub 2018 Apr 10.
7. Kassam AF, et al. Am J Transplant. 2020 Feb;20(2):422-429. doi: 10.1111/ajt.15650. Epub 2019 Nov 16.
8. Yemini R, et al. Obes Surg. 2019 Aug;29(8):2373-2380. doi: 10.1007/s11695-019-03925-1.
9. Bouchard P, et al. Surg Endosc. 2020 Jun;34(6):2657-2664. doi: 10.1007/s00464-019-07042-z. Epub 2019 Jul 31.
10. Cohen JB, et al. Surg Obes Relat Dis. 2019 Jun;15(6):935-941. doi: 10.1016/j.soard.2019.04.002.
11. Outmani L,et al Clin Transplant. 2021 Mar;35(3):e14208. doi: 10.1111/ctr.14208. Epub 2021 Jan 9.
12. Soliman BG, et al. Obes Surg. 2021 Aug;31(8):3436-3443. doi: 10.1007/s11695-021-05435-5. Epub 2021 May 4.
13. Ku E, et al. Am J Transplant. 2021 Nov;21(11):3750-3757. doi: 10.1111/ajt.16779. Epub 2021 Aug 10.
14. Zaminpeyma R, et al. Surg Endosc. 2023 Jan;37(1):494-502. doi: 10.1007/s00464-022-09552-9. Epub 2022 Aug 24.
15. Takata MC, et al.. Surg Obes Relat Dis. 2008 Mar-Apr;4(2):159-64; discussion 164-5. doi: 10.1016/j.soard.2007.12.009. Epub 2008 Mar 4.

Results

Retrospective (pts N 16-503)
Multiple bariatric procedures (AGB,SG,GBP,OAGB)
Mean FU 1 y
Complications rate 3-16% (higher in pts with ESKD)
Mortality 0-2%
No association between MBS and risk of death
Listed % 60-100
No KT %20..dramatic amelioration



Kidney transplant

MBS after KT

Gheith O, et al. Exp Clin Transplant. 2017

22 pts, lesser T2DM new onset (13.6 vs 31.8%), lesser statin therapy (47 vs 71%)

Schindel H, Surg Obes Relat Dis. 2019

30 pts, mortality 6.7%, eGFR increased in MBS group (+ 13.4), similar %EWL compared to not transplanted

Mixed group

Alexander JW, et al. Nutr Clin Pract. 2007

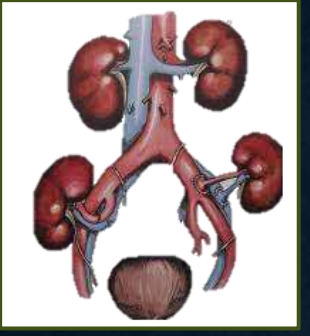
32 pts with CRF..9.8% stabiliz/resolut of CRF; 9 pts candidate to KT..100% succesfully transplanted;10 pts after KT..EWL n.d.

Modanlou KA, et al. Transplantation. 2009

188 pts (72 pre-listing; 29 on waitlist; 87 transplanted)..different procedures, mortality 3.5%, 0.5% acute rejection

Cohen JB, et al Obes Surg. 2019

64 pts (43 pre KT, 21 post KT)..mortality higher pre KT (2.3 vs 0 %)..decreased risk of allograft failure and mortality in post KT group)

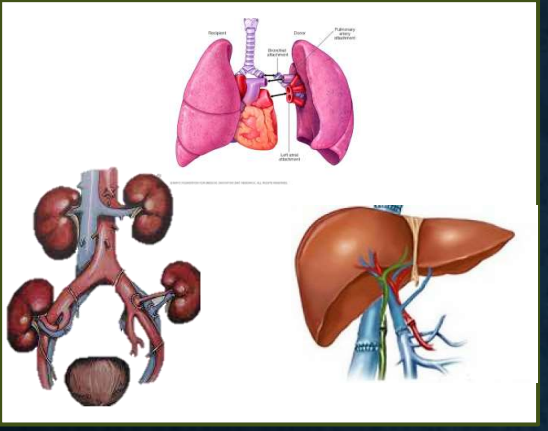


Kidney transplant

Concomitant: no data

After: Lesser mortality, lesser risk of T2DM new onset and statin therapy

Before: Potentially higher mortality, close to 100% of KT listing or no KT



Mixed procedures
MBS after different SOT

Cheng YL, et al. Obes Surg. 2020

Fagenson AM. Et al. Obes Surg. 2020

Verhoeff K, et al. Obes Surg. 2021

Results

Retrospective

Population range 38-469 (MBSAQIP registry)

Mortality 0.3-10%

Higher readmission and/or ICU admission (OR 1.90-2-24)

Final considerations

- *Literature search included papers with low evidence and several different variables such as surgical procedures, disease status, patient's age and follow-up time. In many papers specific data are missing (weight loss, operative time, complications rate methodological report) and are including different transplant timing and surgical team experience*

- *MBS , particularly if performed pre SOT (LT, KT,HLT), ameliorate significantly the accessibility to transplant with expected higher post operative morbidity*

- *MBS can be performed post SOT and sometimes significantly affects complications rate and mortality (mixed and poor data)*

- *Regarding technique, SG seems to guarantee excellent results and demonstrated a safer profile when compared to different procedures (particularly GBP)*

- *In every case multidisciplinary pre-op evaluation represents the best reducing-risk strategy*

- ***THANK YOU!***
- ***ANGELO.IOSSA@UNIROMA1.IT***
- ***@ANGELOIOSSMD***