



Partial jejunal diversion Effect on T2DM

Martin Fried

Head of OB klinika – Center for Treatment of Obesity and Metabolic Disorders, Prague, Czech Republic

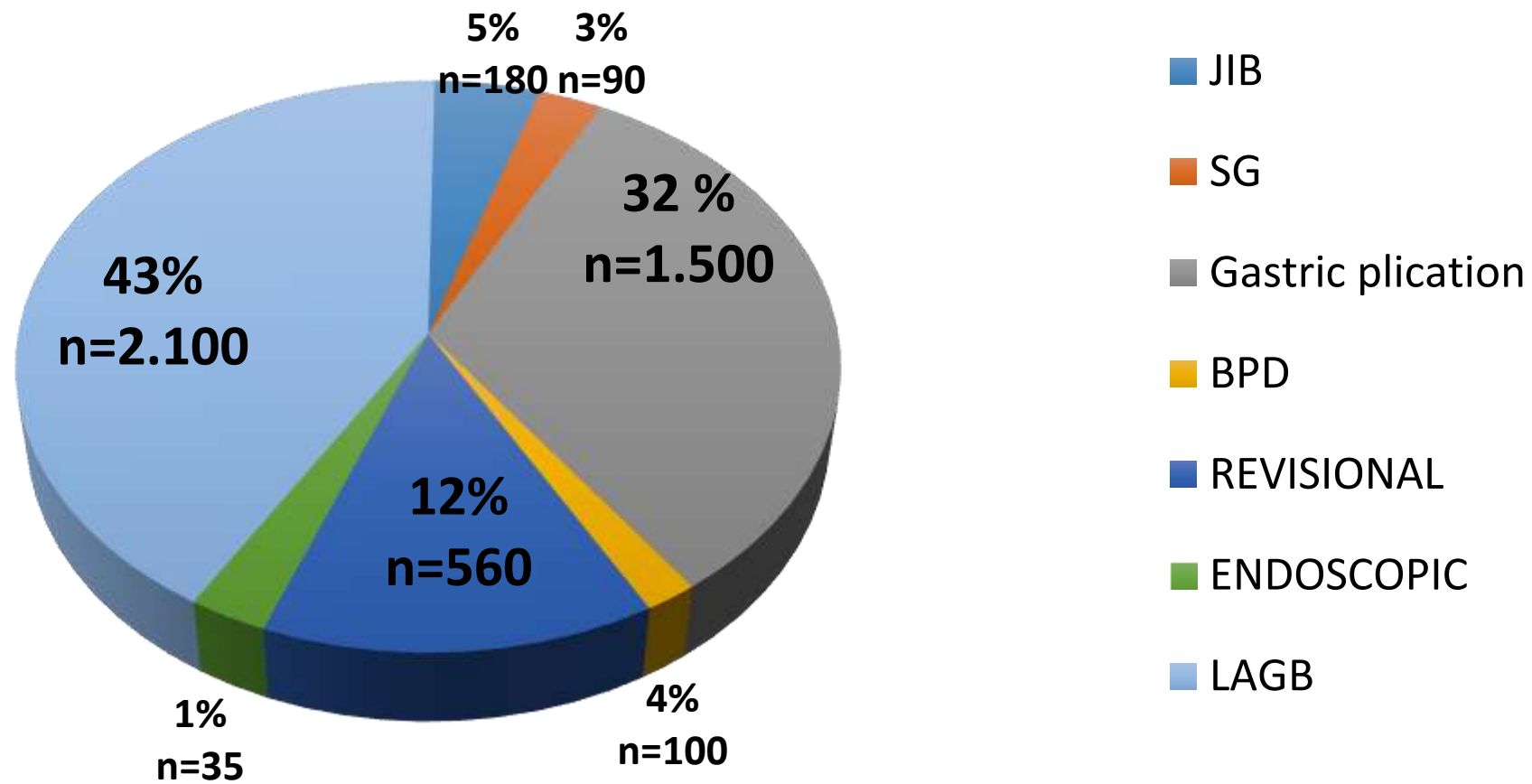
Professor of Surgery, 1st Faculty of Medicine, Charles University Prague, Czech Republic

CONFLICT OF INTEREST DISCLOSURE

In accordance with «EACCME criteria for the Accreditation of Live Educational Events», please disclose whether you have or you have not any conflict of interest with the companies:

[] PI of the referred study (2015-2016)

CASE MIX DISCLOSURE



Metabolic surgery

- Metabolic procedures induce rather sustained improved glycemic control in patients with type 2 diabetes mellitus (T2DM) by different mechanisms.
- One of the factors involved is the introduction of nutrients more quickly and distally in the small intestine.

A novel approach to glycemic control in type 2 diabetes mellitus, partial jejunal diversion: pre-clinical to clinical pathway

Martin Fried,^{1,2} Karin Dolezalova,^{1,2} Adam P Chambers,³ Elliott J Fegelman,⁴ Robin Scamuffa,⁴ Michael L Schwiers,⁴ Jason R Waggoner,⁴ Martin Haluzik,⁵ Randy J Seeley⁶

GI Adaptation via PJD in Rat Model

(Randy Seeley)

- Positive results in rodent model prompted a human proof-of-concept study.
- Pre-clinically, positive impacts with JID/DID on glucose homeostasis, cholesterol, and body composition versus sham control were demonstrated.

Study: Clinical Feasibility of Laparoscopic PJD

**Single Cohort Study of 15 Subjects
Standard T2DM Care**

- 2 weeks
- 3 months
- 6 months
- 9 months
- 12 months

- **HbA1c $\geq 8\%$ & $\leq 11\%$**
- **BMI $\geq 27 \text{ kg/m}^2$ & $< 40 \text{ kg/m}^2$**
- 20 to 60 years of age
- At least one of following:
 - SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg, or anti-HTN med
 - HDL < 40 mg/dL (men) or < 50 mg/dL (women) or low HDL med
 - LDL > 100 mg/dL or high
 - TG ≥ 150 mg/dL or TG lowering med

Primary Observations:

- Change of HbA1c levels at follow up visits

Secondary Observations:

- Safety profile assessed
- Glucose tolerance
- Lipid levels
- Medication usage (HTN, dyslipidemia, T2DM)

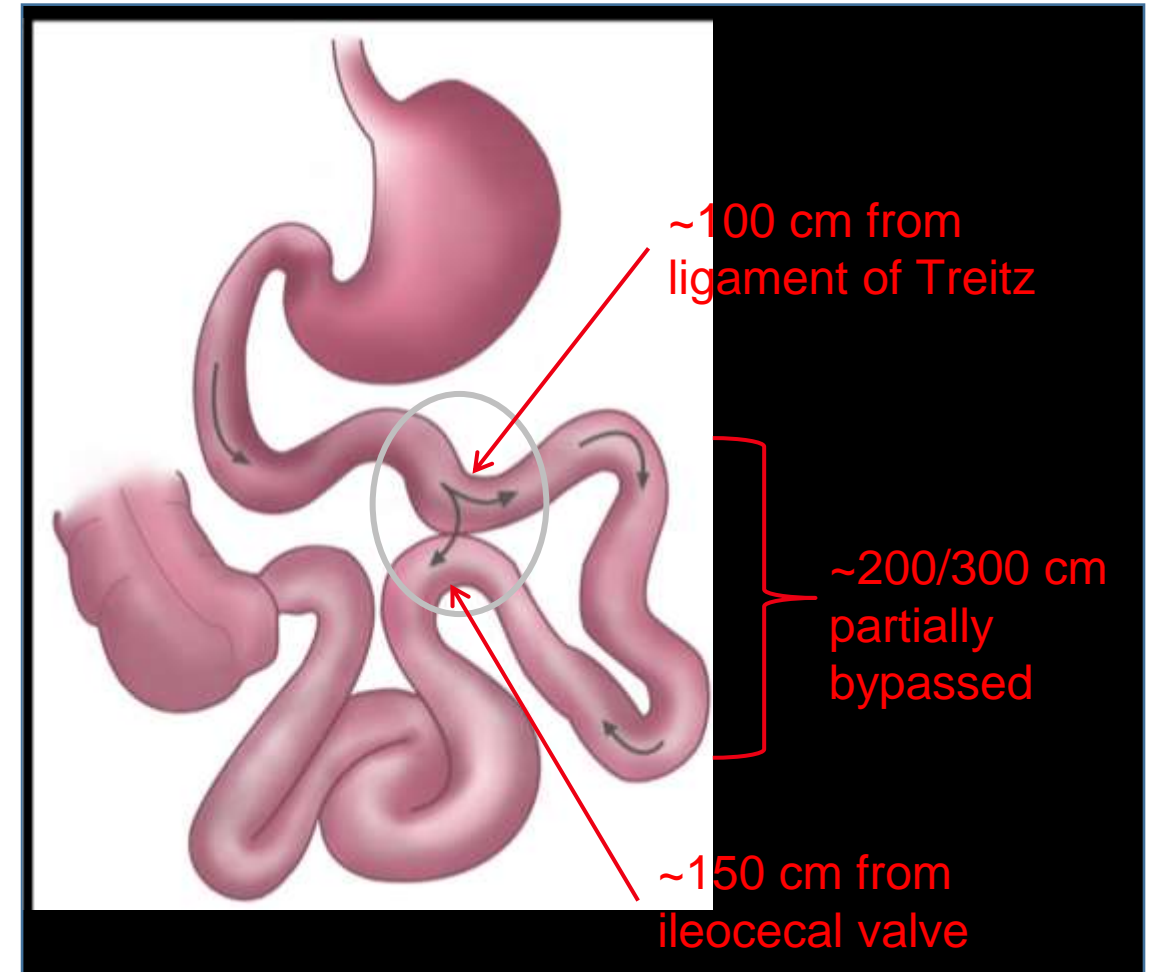
Partial Jejunum Diversion (PJD)

Procedure:

- Laparoscopic side-to-side jejuno-jejunosomy utilizing 60 mm endocutter
- Partial diversion of nutrients

Goals:

- Improved glycemic control
- Weight loss approximately 10%
- Anatomy preserving
- Technically simple for surgeon
- Quick recovery for patient
- No limitations on post-procedure diet



Summary from the Study

- Twelve months post-surgery, the mean (SD) reduction from baseline in HbA1c was 2.3% (1.3) ($p < 0.01$)
- The proof of-concept study was however, limited by a small sample size and advanced disease, with 80% of participants on insulin and a mean time since diagnosis of over 10 years.
- In this small cohort of obese subjects with inadequately controlled T2DM of long duration, substantial, clinically relevant improvements in glycemic and weight control were observed.

The first 10 pts who reached

„Real life“ results (n=30)

2, 5 & 7 yrs follow-up

comparison

with the Study results (n=15) 1 year follow-up

Demographics & Baseline Characteristics

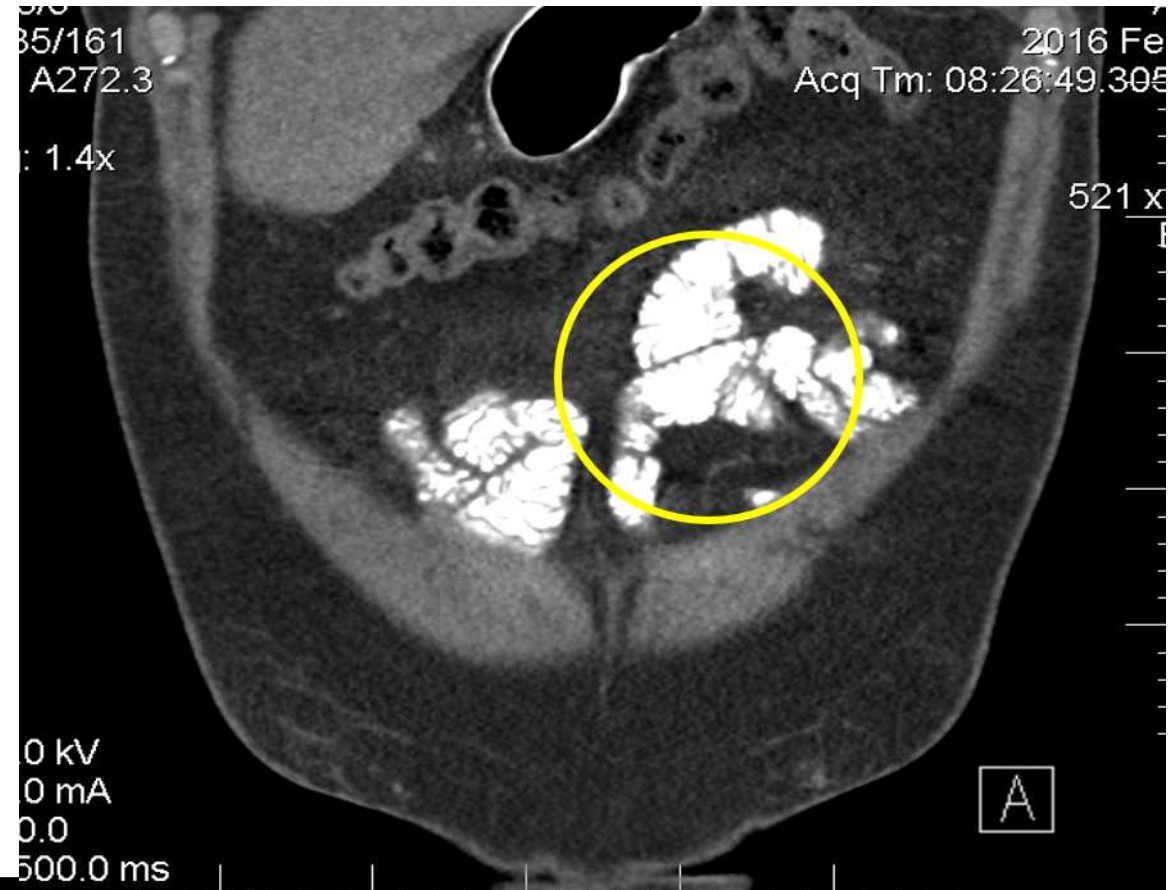
„Real life“

Characteristics n=15		
Age, years	Mean (SD)	52.7 (6.11)
Gender, n (%)	Female	7 (46.7%)
	Male	8 (53.3%)
BMI, kg/m ²	Mean	34.1
	Range	27.4 to 39.8
OADs & Insulin usage, n (%)	Insulin	12 (80.0%)
	Other AHAs	14 (93.3%)
Diagnosed T2DM, years	Mean (SD)	10.9 (5.95)
	Range	4 to 26

Characteristics n=30		
Age, years	Mean	59
Gender, n (%)	Female	16 (53.3%)
	Male	14 (46.6%)
BMI, kg/m ²	Mean	34.4
	Range	29.5 to 42.3
OADs & Insulin usage, n (%)	OAD & Insulin	22 (66.6%)
	OADs only	11 (33.4%)
Diagnosed T2DM, years	Mean	9.5
	Range	2 to 20

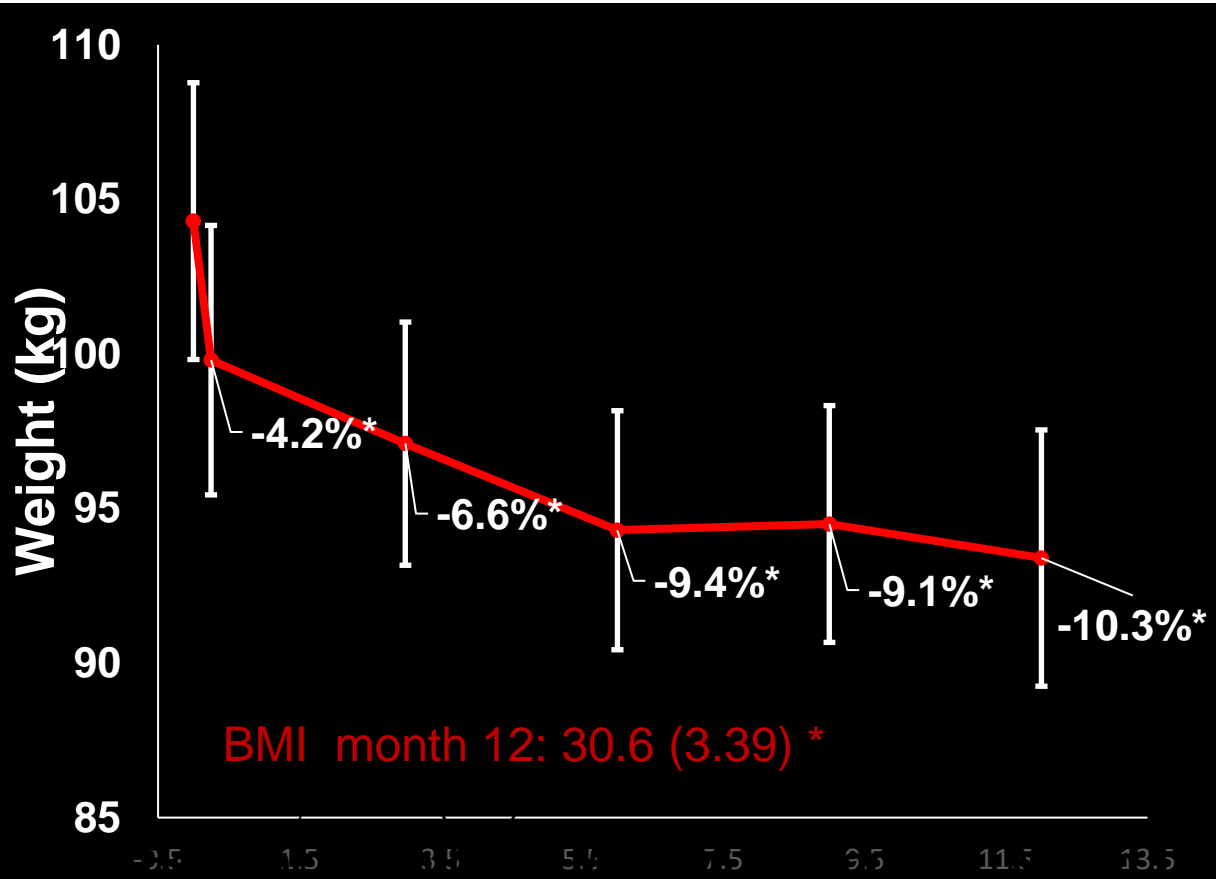
Procedure Data

- Duration: 1 to 2 hours (mean 104 min)
- Patients discharged uneventfully
- Patients returned to normal diet immediately

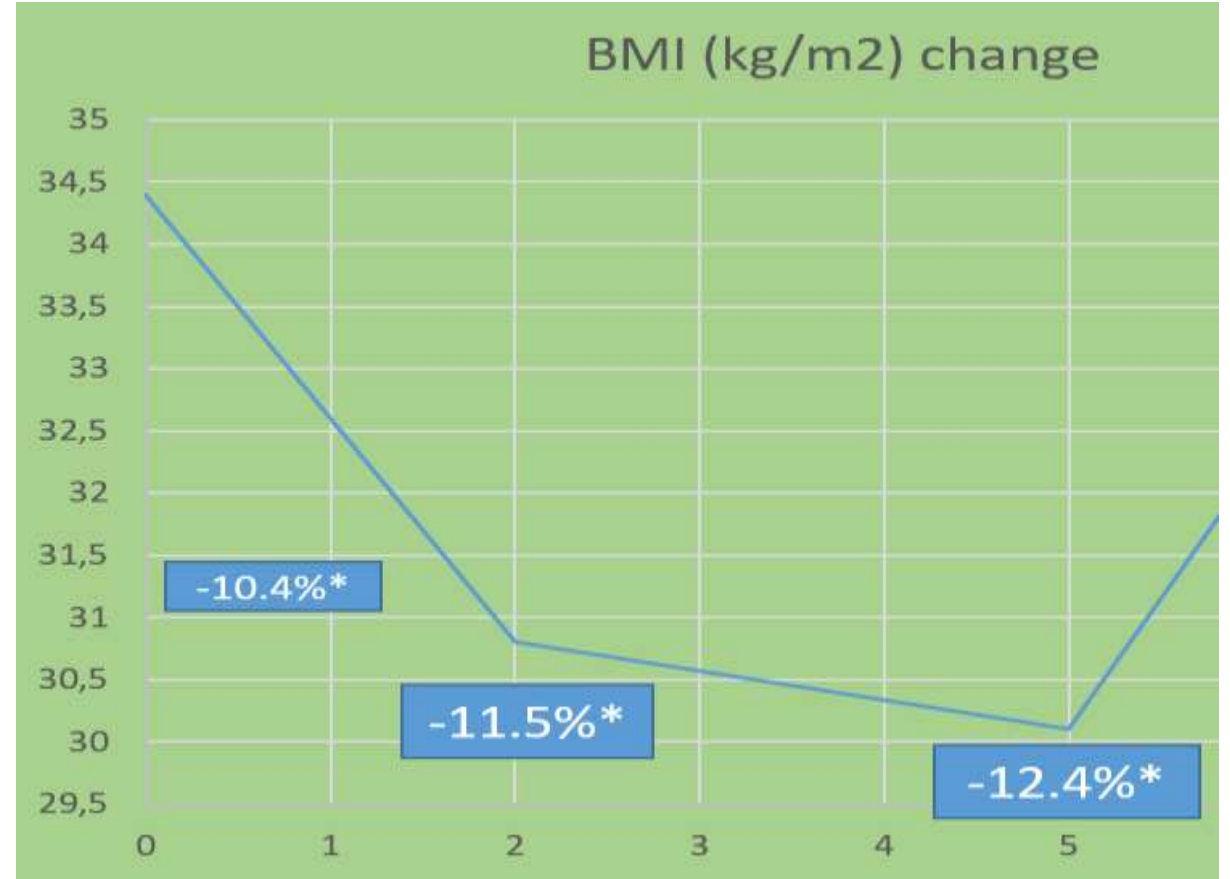


Anastomosis patent at 12 months

Kg

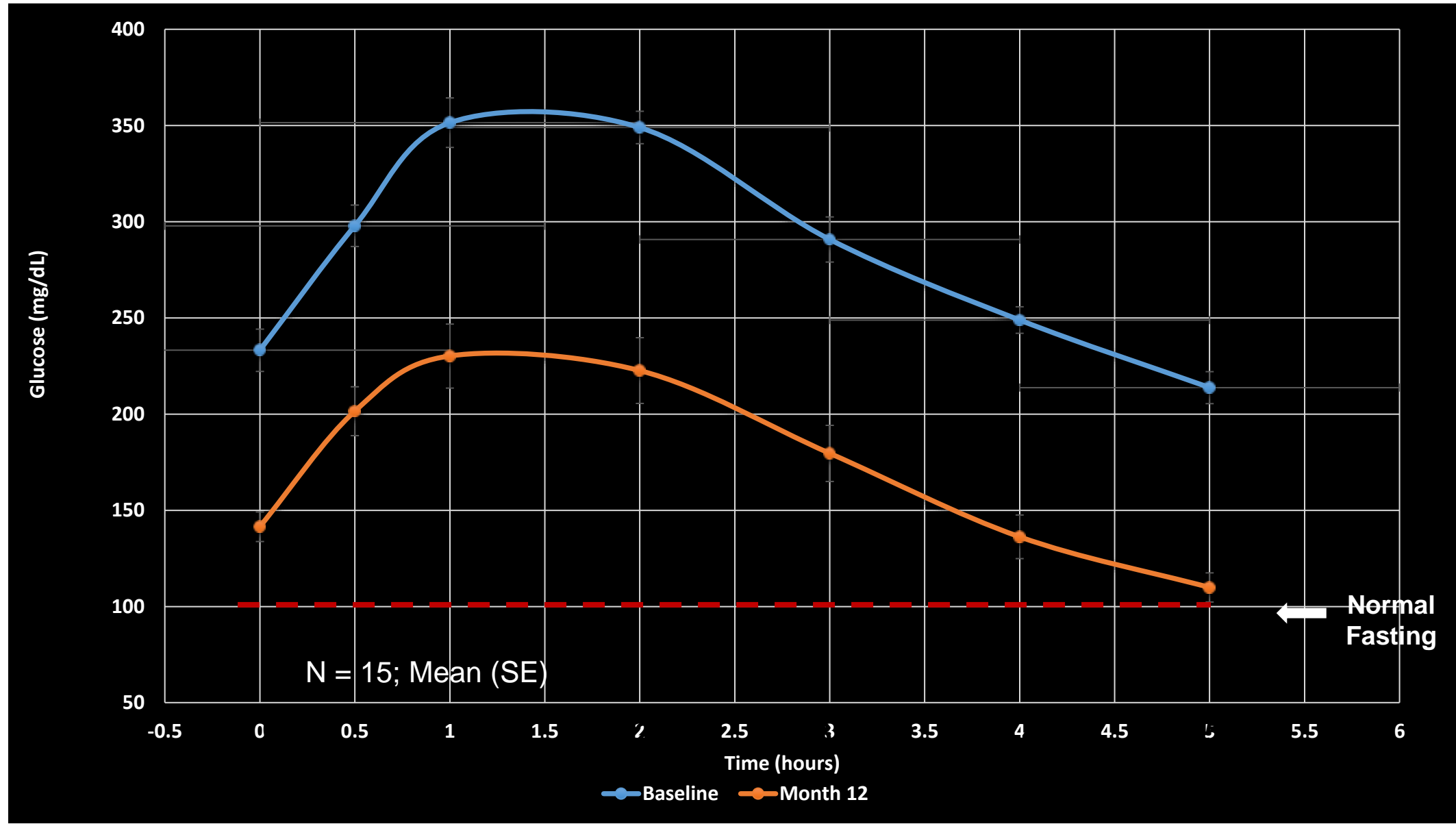


BMI



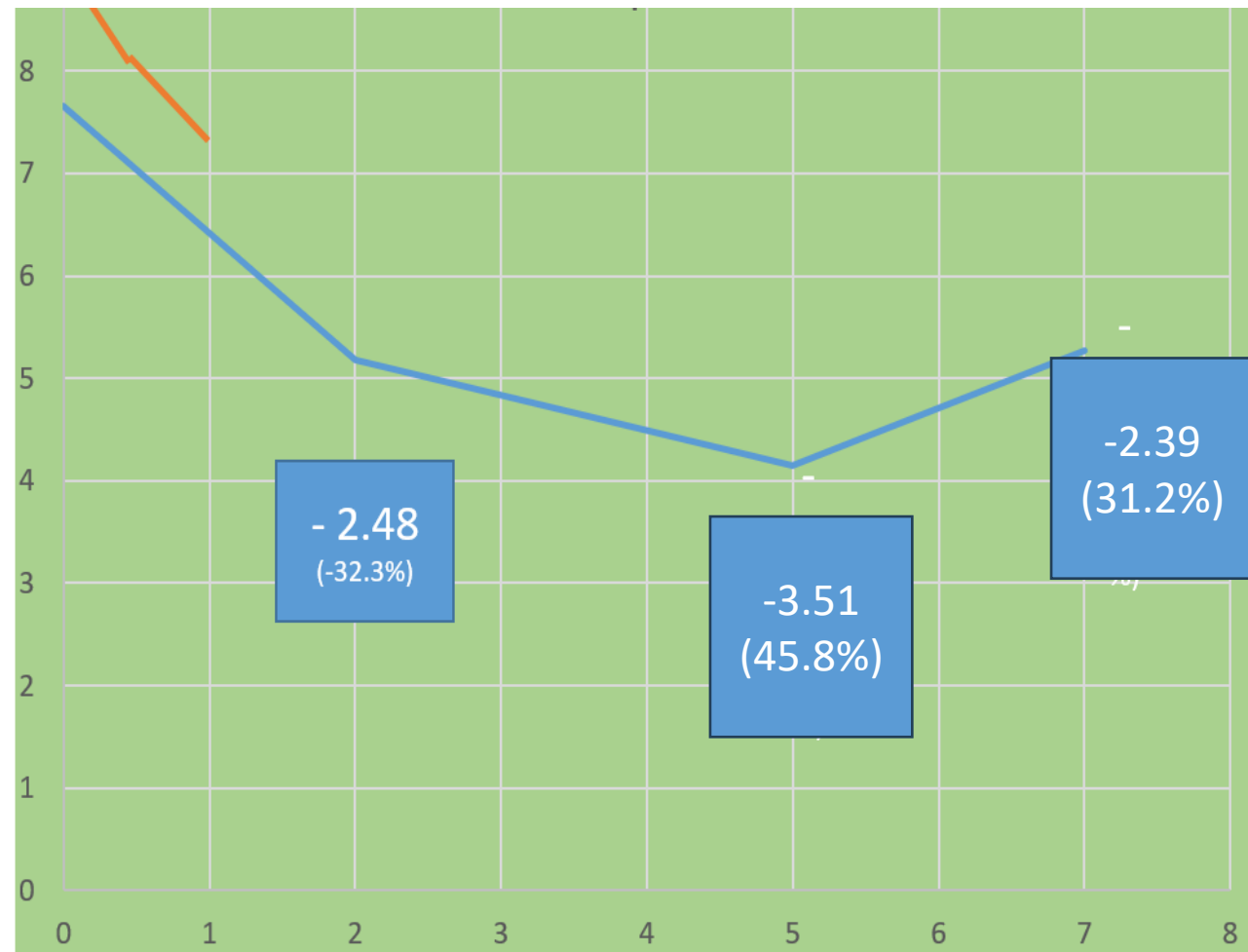
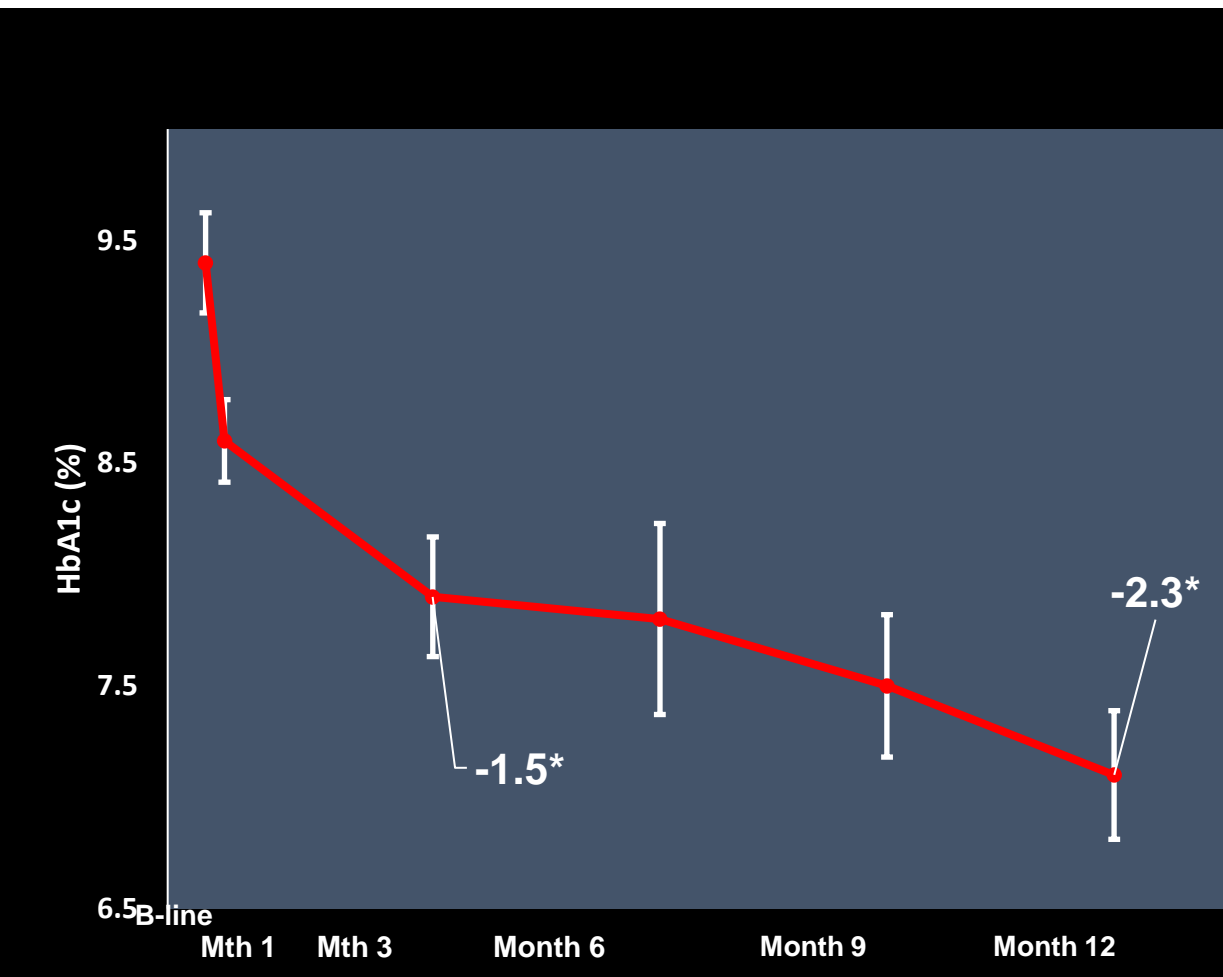
* p < 0.05

PJD Impact on OGTT

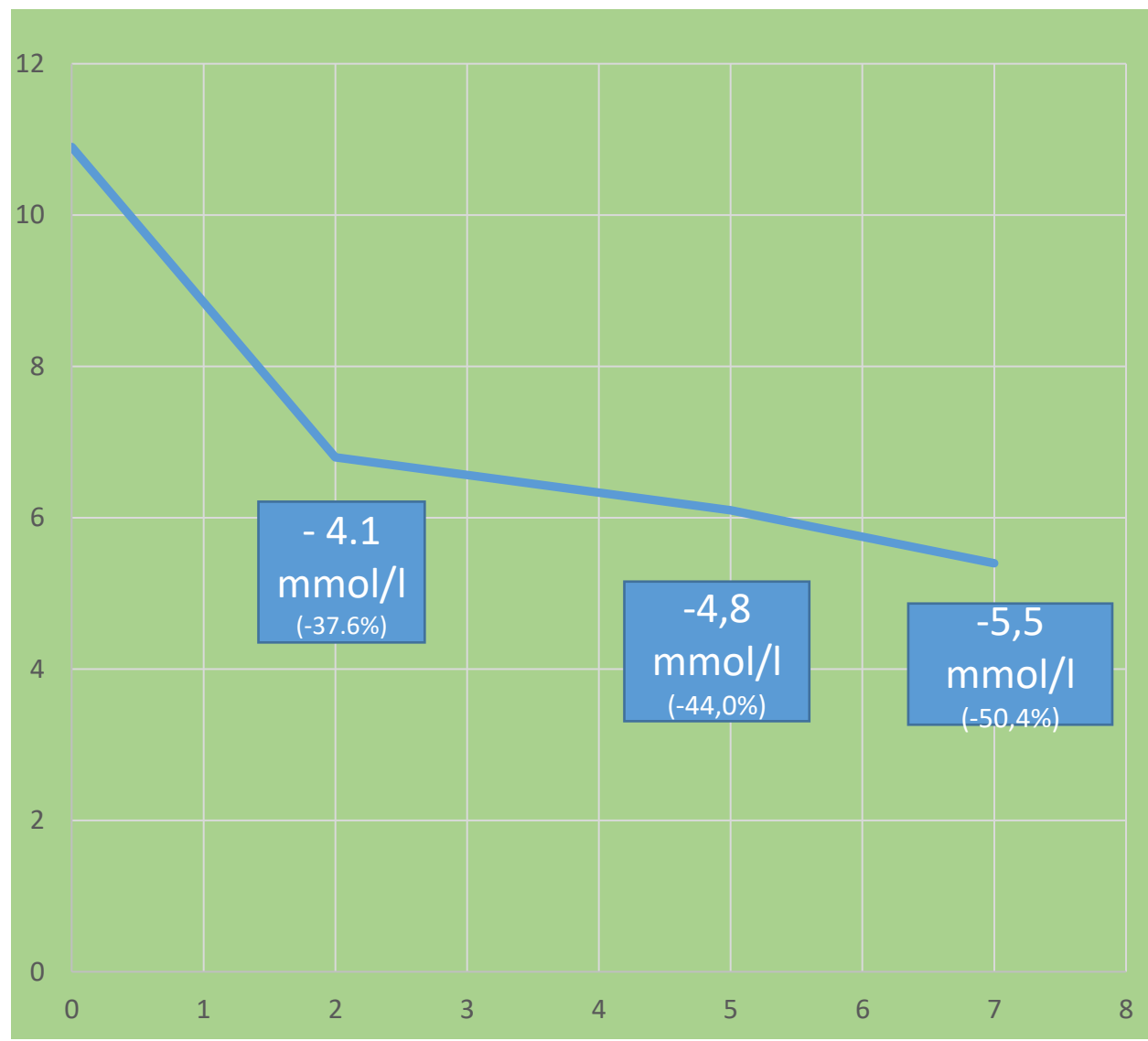
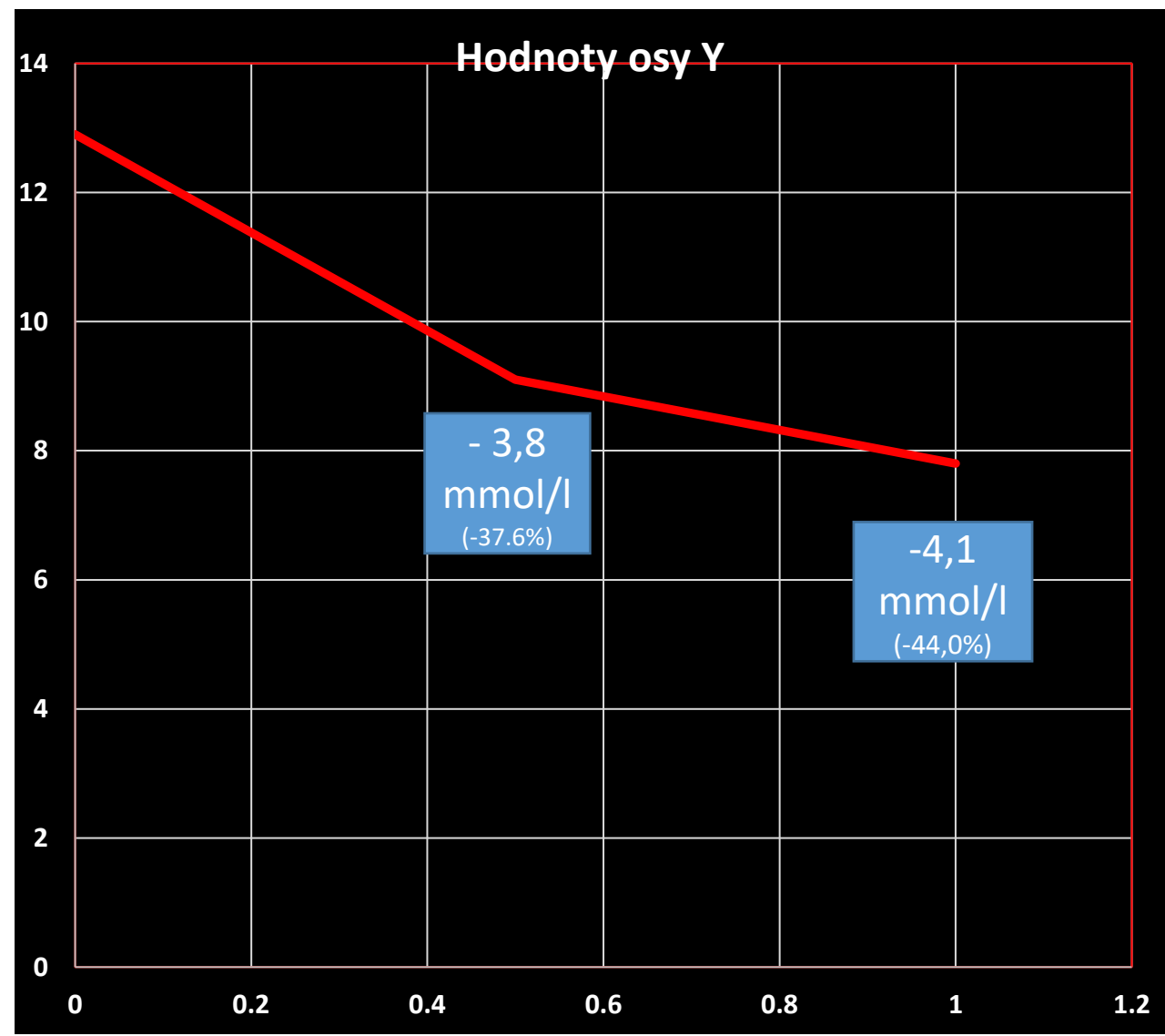


* p < 0.05

PJD Impact on HbA1c



PJD Impact on glycaemia



Conclusions

Laparoscopic PJD promising as a non-drug intervention for Type 2 diabetes, further study warranted

- Patients adopted normal diet immediately post-op
- Glycemic control improved
- Clinically relevant weight loss
- Lipid control improved

Conclusion

- Partial jejunal diversion may provide an anatomy sparing, low-risk, potentially reversible, metabolic procedure for patients with poorly controlled T2DM, which does not impose significant alterations in lifestyle.

Thank you for your attention

www.obklinika.cz

