بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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Comparative study between the effect of Single Anastomosis Gastric Bypass versus Roux-en-Y gastric Bypass in morbidly obese patient as regard remission of type-2 DM.

Thesis

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Nader Abouzekry

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List of Abbreviations

Abb.	Full term
AgRP	Agouti related protein
BMI	Body mass index
CCK	Cholecystokinin
CRP	C-Reactive protein
DiaRem	Diabetes Remission
ER	Endoplasmic reticulum
EWL	Excess weight loss
FFA	Free fatty acid
FGF	Fibroblastic growth factor
GEJ	Gastro-esophageal junction
GERD	Gastro-esophageal reflux disease
GIP	Gastric inhibitory peptide
HBA1C	Haemoglobin A1C
ICAM	Intercellular adhesive molecule
IFN	Interferon
IKKB	Inhibitor of NF-KB Kinase B
IL	Interleukin
IM	Intestinal metaplasia
IP10	Inducible protein 10
IRS	Insulin receptor substrate
JNK	Jun N-terminal kinase
LDL	Low density lipoprotein
LMGB/OAGBP	Laparoscopic mini gastric bypass
MAPK	Mitogen activated protein kinase
MCP-1	Monocyte chemoattractant protein 1
MMIF	Macrophage migration inhibiting factor
NAFLD	Non alcoholic fatty liver disease
NASH	Non alcoholic steatohepatitis
NF-KB	Nuclear factor kappa-beta
NS	Nervous system

List of Abbreviations Cont...

Abb.	Full term
OAGB	One anastomosis gastric bypass
OSA	Obstructive sleep apnea
PAI-1	Plasminogen activator inhibitor -1
RANTES	Regulate upon activation of novel T-cell expression sequences
RAS	Renin angiotensin system
RY-GBP	Roux en Y gastric bypass
SAA	Serum amyloid A
SMC	Smooth muscle cell
SOCS	Suppressor of cytokine signaling
T2DM	Type 2 Diabetes Mellitus
TG	Triglyceride
TGF	Tumor growth factor
TNF	Tumor necrotic factor
VCAM	Vascular cell adhesion molecule
VEGF	Vascular endothelial growth factor
VIP	Vasoactive intestinal peptide
WAT	White adipose tissue

INTRODUCTION

Obesity is a pandemic health problem in both developed and developing countries and the costs of care continue to grow in parallel with the prevalence of the disease. This morbid condition leads to a high incidence of complications and a decrease in life expectancy, especially among younger adults ***(Fontaine et al., 2013).***

Surgical treatment of morbid obesity results in significant sustained weight loss, which reduces obesity-related morbidity and increases survival compared with patients receiving optimal medical therapy ***(Sjostrom et al., 2007).***

Several conventional and novel methods of bariatric surgery—termed metabolic surgeries — induce long-term remission of type 2 diabetes mellitus (T2DM) and dramatically improve other metabolic abnormalities, such as hyperlipidemia and hypertension, independent of the patients' weight. Some previous studies demonstrated that these metabolic effects are not only attributable to drastic weight loss and diminished caloric intake, but also to endocrine changes that result from surgical manipulation of the gastrointestinal tract ***(Rubino et al., 2010).***

Laparoscopic mini gastric bypass (LMGB/OAGBP), described by Rutledge, has a lower operative morbidity with equivalent efficacy compared to laparoscopic Roux-en-Y

gastric bypass (RY-GBP), in terms of resolution of the metabolic syndrome, loss of excess weight (EWL) and improvement of the quality of life ***(Lee et al., 2005).***

Considering the escalating pandemic of T2DM, clinicians must recognize the need for improved therapeutic options. When behavioral and pharmacological interventions fail to manage T2DM, metabolic surgery offers an effective alternative, with the potential of complete remission of the disease ***(Rubino et al., 2010).***

Whilst considered cost-effective and safe, the availability of the operation is unable to meet the demand due to the rapidly rising prevalence of obesity ***(Warren et al., 2015).***

Furthermore, although metabolic surgery may result in improvement in obesity co-morbidities, not all patients with diabetes undergo remission. In the context of a health service with limited resources, a predictive score for the probability of significant diabetes improvement is required to target surgery only to those most likely to benefit. Current predictive scores include the DiaRem score ***(Still et al., 2014).***

Various mechanisms have been proposed for predicting Type 2 DM remission Durable Type 2 DM remission has been associated with early diabetes stage and significant percent excess body weight loss (%EWL), While, failure to achieve long-term remission has been associated with inadequate

weight loss beside use of insulin and high percent of glycated haemoglobin ***(Still et al., 2014).***

The DiaRem score, which is based on a retrospective study of 690 patients with diabetes (most were followed up for ≤2 years), was created using a Cox regression model, and four preoperative clinical variables were identified in the final scoring model: insulin use, age, HbA1c, and type of antidiabetic drugs used. On the basis of the DiaRem score (ranging from 0 to 22), patients were classified into five groups ***(Ali et al., 2014).***

Table (1): DiaRem scoring system and probability of remission ***(Craig et al., 2018).***

Prediction factor		Score
Age (years)	If age <40, enter 0 →	2
	If age 40–49, enter 1 →	
	If age 50–59, enter 2 →	
	If age 60+, enter 3 →	
HbA1c (%)	If HbA1c <6.5, enter 0 →	4
	If HbA1c 6.5–6.9, enter 2 →	
	If HbA1c 7.0–8.9, enter 4 →	
	If HbA1c >9, enter 6 →	
Diabetes medication	If not sulfonylureas or ISA*, enter 0 →	3
	If sulfonylureas or ISA*, enter 3 →	
Insulin treatment	If not on insulin, enter 0 →	10
	If on insulin, enter 10 →	
DiaRem score (sum) →		19

*Insulin sensitizing agent other than metformin

DiaRem score	Probability of remission
0–2	88%–99%
3–7	64%–88%
8–12	23%–49%
13–17	11%–33%
18–22	2%–16%