Xin Huang, Tao zhu, Xiaocheng Bi, Shaozhuang Liu Qilu Hospital of Shandong University, China

山东大学齐鲁医院
QILU HOSPITAL OF SHANDONG UNIVERSITY

The impact of type 2 diabetes on polycystic ovary syndrome in patients undergoing sleeve gastrectomy

Xin Huang, Tao zhu, Xiaocheng Bi, Shaozhuang Liu

Department of Bariatric and Metabolic Surgery, Qilu Hospital of Shandong University, China

State Key Laboratory of Diabetes and Obesity Surgery, Shandong University, China

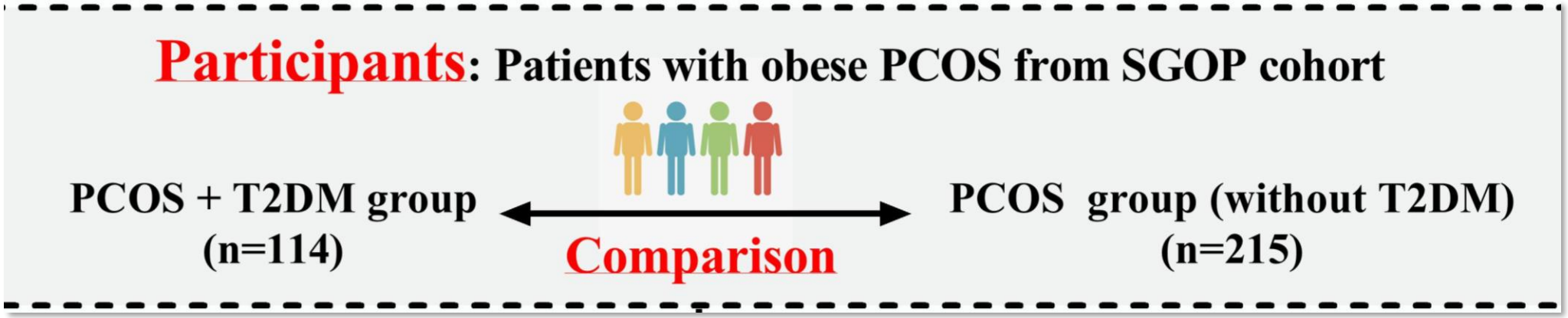
The impact of type 2 diabetes on polycystic ovary syndrome in patients undergoing sleeve gastrectomy

Xin Huang, Tao zhu, Xiaocheng Bi, Shaozhuang Liu Qilu Hospital of Shandong University, China

A prospective bariatric cohort: Sleeve Gastrectomy for Obese PCOS (SGOP)

Ethical approval: Medical Ethics Committee of Shandong University Qilu Hospital (No. 2019-135)

Clinical trial registry: Chinese Clinical Trial Registry (No. ChiCTR1900026845)



Objective:

- Determine the impact of T2DM on the phenotype of PCOS in patients with obesity
- Determine the impact of T2DM on the prognosis of PCOS for up to 1 year after SG

The impact of type 2 diabetes on polycystic ovary syndrome in patients undergoing sleeve gastrectomy

Xin Huang, Tao zhu, Xiaocheng Bi, Shaozhuang Liu Qilu Hospital of Shandong University, China

Table 1. Baseline characteristics of patients before and after PSM.

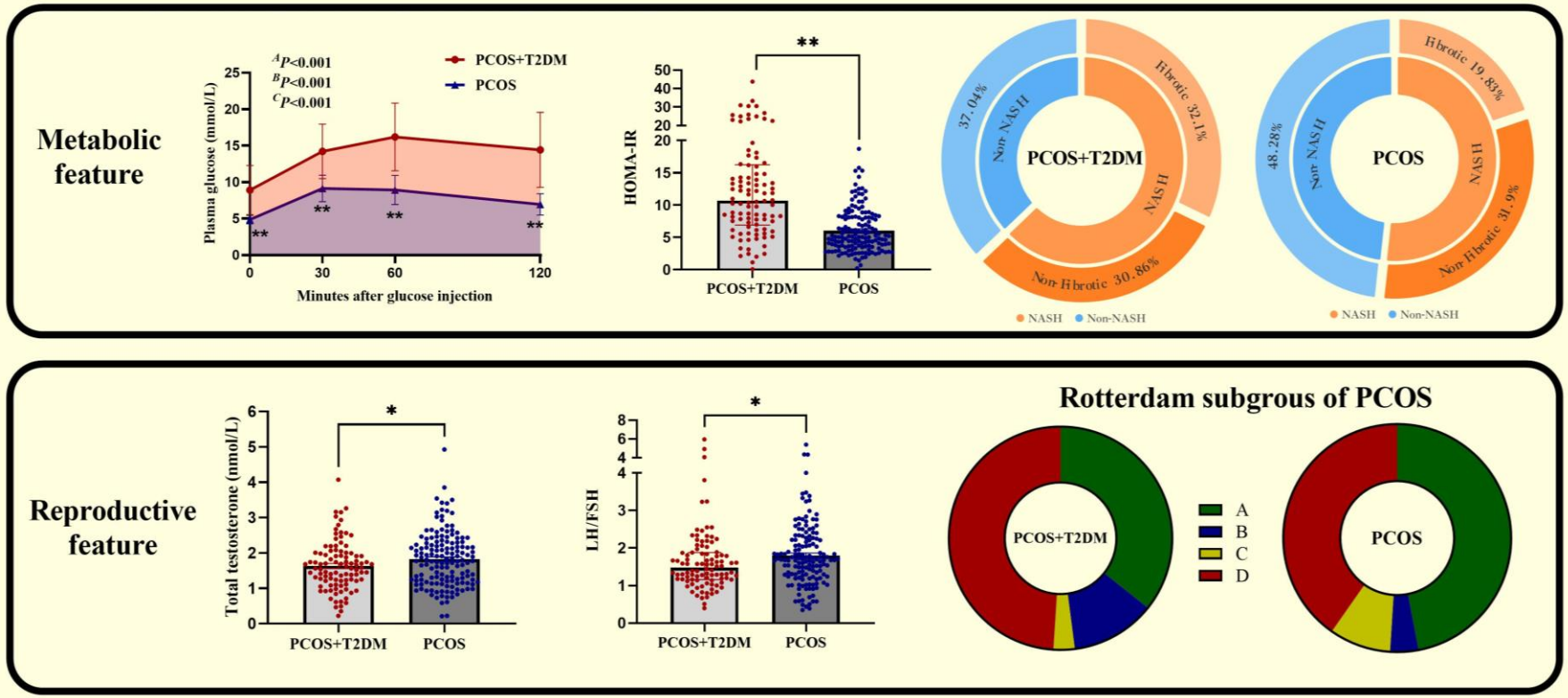
Parameters	Before PSM			After PSM		
	PCOS+T2DM (n=114)	PCOS (n=215)	*P* value	PCOS+T2DM (n=98)	PCOS (n=149)	*P* value
Age (years)	30.22 ± 5.66	27.74 ± 5.57	<0.001	**29.90 ± 5.05**	**29.49 ± 4.88**	0.530
BMI (kg/m^2)	41.99 ± 6.94	40.32 ± 6.31	0.028	**41.58 ± 6.43**	**40.75 ± 6.47**	0.324
Waist hip ratio	0.97 ± 0.11	0.93 ± 0.15	<0.001	0.98 ± 0.10	0.93 ± 0.12	<0.001
HOMA-IR	10.02 [6.21-14.23]	5.29 [3.62-7.77]	<0.001	10.70 [6.90-16.23]	5.07 [3.59-8.12]	<0.001
Comorbidities						
Hypertension, n (%)	47 (41.23)	88 (40.93)	0.958	39 (39.80)	63 (42.28)	0.698
Obstructive sleep, n (%)	73 (64.04)	128 (59.53)	0.426	62 (63.27)	91 (61.07)	0.729
Fasting plasma glucose (mmol/L)	8.85 ± 3.42	4.86 ± 0.59	<0.001	9.00 ± 3.46	4.90 ± 0.49	<0.001
HbA1c (%)	8.07 ± 1.71	5.53 ± 0.29	<0.001	8.17 ± 1.68	5.53 ± 0.24	<0.001
OGTT 2h glucose (mmol/L)	15.25 ± 5.45	6.81 ± 1.61	<0.001	15.07 ± 6.63	6.06 ± 2.69	<0.001
Diabetes treatment, n (%)	53 (46.39)	--	--	44 (44.89)	--	--
On insulin therapy, n (%)	11 (9.64)	--	--	7 (7.14)	--	--

Data are presented as Mean ± SD, Range (minimum-maximum), Median [IQR], or n (%). ** *P* <0.01 PCOS+T2DM vs. PCOS.
PSM, propensity score matching; BMI, body mass index; HbA1c, glycated hemoglobin; OGTT, oral glucose tolerance test.

The impact of type 2 diabetes on polycystic ovary syndrome in patients undergoing sleeve gastrectomy

Xin Huang, Tao zhu, Xiaocheng Bi, Shaozhuang Liu Qilu Hospital of Shandong University, China

Primary outcome: The impact of T2DM on features of obese PCOS

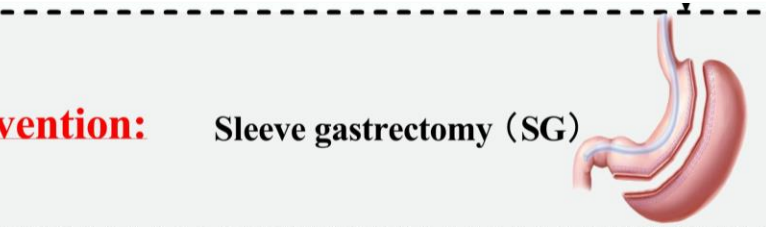


- **T2DM is associated with aggravated metabolic but milder reproductive feature of obese PCOS**

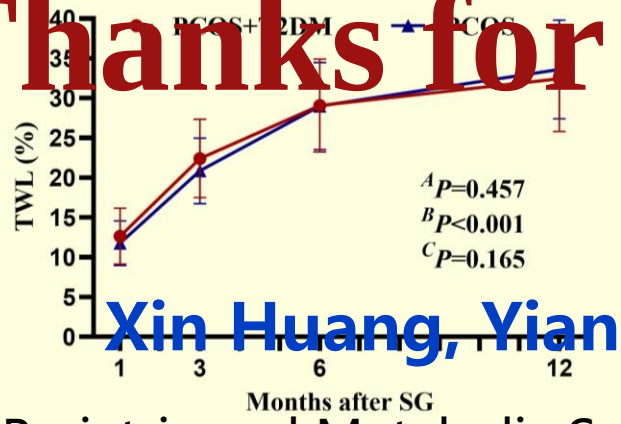
The impact of type 2 diabetes on polycystic ovary syndrome in patients undergoing sleeve gastrectomy

Xin Huang, Tao zhu, Xiaocheng Bi, Shaozhuang Liu Qilu Hospital of Shandong University, China

Intervention: Sleeve gastrectomy（SG） + 1-year follow-up after surgery



Secondary Outcome: The impact of T2DM on prognosis of obese PCOS after SG



Findings & Highlights

- T2DM is associated with aggravated metabolic but milder reproductive features of obese PCOS.
- *T2DM tended to retard but not attenuate the resumption of regular menstruation 1 year after SG.
- *These findings help to elucidate the interplay between PCOS, T2DM, and obesity.

Thanks for your listening !

Xin Huang, Yian Zhao, Shaozhuang Liu

Department of Bariatric and Metabolic Surgery, Qilu Hospital of Shandong University, China

State Key Laboratory of Diabetes and Obesity Surgery, Shandong University, China