

Table SI. Comparison of patient's clinical characteristics and metabolic parameters between non-insulin-resistant and insulin-resistant groups among benign and malignant ovarian neoplasms (in the form of categorical data).

Variable	Benign neoplasms		P-value	Malignant neoplasms		P-value
	Non-IR (HOMA-IR <1.208)	IR (HOMA-IR ≥1.208)		Non-IR (HOMA-IR <1.208)	IR (HOMA-IR ≥1.208)	
Young/old age (years)			0.448 ^a			0.626 ^a
Young (≤40)	9 (52.9%)	7 (70.0%)		6 (33.3%)	1 (14.3%)	
Old (>40)	8 (47.1%)	3 (30.0%)		12 (66.7%)	6 (85.7%)	
Marital status			0.613 ^a			>0.999 ^a
Married	15 (88.2%)	8 (80.0%)		16 (88.9%)	6 (85.7%)	
Unmarried	2 (11.8%)	2 (20.0%)		2 (11.1%)	1 (14.3%)	
Parity status			0.039 ^a			0.640 ^a
Non-parous	3 (17.6%)	6 (60.0%)		5 (27.8%)	3 (42.9%)	
Parous	14 (82.4%)	4 (40.0%)		13 (72.2%)	4 (57.1%)	
Menopausal status			>0.999 ^a			0.378 ^a
Yes	4 (23.5%)	2 (20.0%)		8 (44.4%)	5 (71.4%)	
No	13 (76.5%)	8 (80.0%)		10 (55.6%)	2 (28.6%)	
Contraception type			0.124 ^a			>0.999 ^a
None + non-hormonal	12 (70.6%)	10 (100%)		12 (66.7%)	5 (71.4%)	
Hormonal	5 (29.4%)	0		6 (33.3%)	2 (28.6%)	
Ovarium side affected			0.590 ^b			0.243 ^b
Left side	4 (23.5%)	1 (10.0%)		4 (22.2%)	4 (57.1%)	
Right side	3 (17.6%)	3 (30.0%)		9 (50.0%)	2 (28.6%)	
Bilateral	10 (58.8%)	6 (60.0%)		5 (27.8%)	1 (14.3%)	
SBP (mmHg)			0.682 ^b			0.484 ^b
Normal (<130)	10 (58.8%)	7 (70.0%)		7 (38.9%)	4 (57.1%)	
High-normal (130-139)	6 (35.3%)	2 (20.0%)		4 (22.2%)	0	
Grade I (140-159)	1 (5.9%)	1 (10.0%)		6 (33.3%)	2 (28.6%)	
Grade II (≥160)	0	0		1 (5.6%)	1 (14.3%)	
DBP (mmHg)			0.346 ^b			0.396 ^b
Normal (<85)	10 (58.8%)	8 (80.0%)		10 (55.6%)	3 (42.8%)	
High-normal (85-89)	6 (35.3%)	1 (10.0%)		4 (22.2%)	2 (28.6%)	
Grade I (90-99)	1 (5.9%)	1 (10.0%)		4 (22.2%)	1 (14.3%)	
Grade II (≥100)	0	0		0	1 (14.3%)	
BMI Asia-Pacific classification (kg/m ²)			0.362 ^b			0.879 ^b
<18.5 (Underweight)	1	3		8 (44.4%)	3 (42.8%)	

	(5.9%)	(30.0%)				
18.5-22.9 (Normal)	7 (41.2%)	3 (30.0%)		7 (38.9%)	2 (28.6%)	
23-24.9 (Overweight)	6 (35.3%)	2 (20.0%)		1 (5.6%)	1 (14.3%)	
≥25 (Obese)	3 (17.6%)	2 (20.0%)		2 (11.1%)	1 (14.3%)	
BMI class			0.695 ^a			0.597 ^a
Lower-class BMI (normal + underweight)	8 (47.1%)	6 (60.0%)		15 (83.3%)	5 (71.4%)	
Higher-class BMI (overweight + obese)	9 (52.9%)	4 (40.0%)		3 (16.7%)	2 (28.6%)	
FPG (mg/dL)			0.041 ^a			0.036 ^b
Normal (<100)	17 (100%)	7 (70.0%)		15 (83.3%)	3 (42.8%)	
Moderate (100-125)	0	3 (30.0%)		3 (16.7%)	2 (28.6%)	
High (≥126)	0	0		0	2 (28.6%)	
FIL (μIU/mL)			<0.001 ^a			0.015 ^a
Normal (<7)	17 (100%)	3 (30.0%)		18 (100%)	0	
IR (≥7)	0	7 (70.0%)		0	7 (100%)	
HOMA-β (%)			0.067 ^b			0.164 ^b
Normal β-cell function (76.25- 122.13)	5 (29.4%)	3 (30.0%)		14 (77.8%)	4 (57.1%)	
β-cell dysfunction (≤76.25)	11 (64.7%)	3 (30.0%)		2 (11.1%)	3 (42.9%)	
β-cell excessive function (≥122.13)	1 (5.9%)	4 (40.0%)		2 (11.1%)	0	
FIRI			<0.001 ^a			0.002 ^a
Normal (≤0.77)	13 (76.5%)	0		13 (72.2%)	0	
IR (>0.77)	4 (23.5%)	10 (100%)		5 (27.8%)	7 (100%)	
QUICKI			0.012 ^a			0.280 ^a
Normal (>0.339)	17 (100%)	6 (60.0%)		18 (100%)	6 (85.7%)	
IR (≤0.339)	0	4 (40.0%)		0	1 (14.3%)	

^aFisher exact test; ^b χ^2 test. BMI, body mass index; SBP, systolic blood pressure; DBP, diastolic blood pressure; FPG, fasting plasma glucose; FIL, fasting insulin level; HOMA-IR, homeostatic model assessment of insulin resistance; HOMA-β, homeostasis model assessment of β-cell dysfunction; FIRI, fasting insulin resistance index; QUICKI, quantitative insulin sensitivity check index.

Table SII. Comparison of clinical characteristics of patients and metabolic parameters between two classes of body mass index among benign and malignant ovarian neoplasms (in the form of categorical data).

Variable	Benign neoplasms		P-value	Malignant neoplasms		P-value
	Normal + underweight	Obese + overweight		Normal + underweight	Obese + overweight	
Young/old age (years)			0.581 ^a			>0.999 ^b
Young (≤ 40)	9 (64.3%)	7 (53.8%)		6 (30.0%)	1 (20.0%)	
Old (> 40)	5 (35.7%)	6 (46.2%)		14 (70.0%)	4 (80.0%)	
Marital status			0.596 ^b			0.504 ^b
Married	11 (78.6%)	12 (92.3%)		18 (90.0%)	4 (80.0%)	
Unmarried	3 (21.4%)	1 (7.7%)		2 (10.0%)	1 (20.0%)	
Parity status			>0.999 ^a			0.283 ^b
Non-parous	5 (35.7%)	4 (30.8%)		5 (25.0%)	3 (60.0%)	
Parous	9 (64.3%)	9 (69.2%)		15 (75.0%)	2 (40.0%)	
Menopausal status			0.648 ^b			0.645 ^b
Yes	4 (28.6%)	2 (15.4%)		11 (55.0%)	2 (40.0%)	
No	10 (71.4%)	11 (84.6%)		9 (45.0%)	3 (60.0%)	
Contraception type			>0.999 ^b			>0.999 ^b
None + Non-hormonal	11 (78.6%)	11 (84.6%)		13 (65.0%)	4 (80.0%)	
Hormonal	3 (21.4%)	2 (15.4%)		7 (35.0%)	1 (20.0%)	
Ovarium side affected			0.582 ^a			0.910 ^a
Left side	3 (21.4%)	2 (15.4%)		6 (30.0%)	2 (40.0%)	
Right side	4 (28.6%)	2 (15.4%)		9 (45.0%)	2 (40.0%)	
Bilateral	7 (50.0%)	9 (69.2%)		5 (25.0%)	1 (20.0%)	
SBP (mmHg)			0.770 ^a			0.215 ^a
Normal (< 130)	8 (57.1%)	9 (69.2%)		10 (50.0%)	1 (20.0%)	
High-normal (130–139)	5 (35.7%)	3 (23.1%)		4 (20.0%)	0	
Grade I (140–159)	1 (7.2%)	1 (7.7%)		5 (25.0%)	3 (60.0%)	
Grade II (≥ 160)	0	0		1 (5.0%)	1 (20.0%)	
DBP (mmHg)			0.176 ^a			0.009 ^a
Normal (< 85)	10 (71.4%)	8 (61.5%)		13 (65.0%)	0	
High-normal (85–89)	2 (14.3%)	5 (38.5%)		2 (10.0%)	4 (80.0%)	
Grade I (90–99)	2 (14.3%)	0		4 (20.0%)	1 (20.0%)	
Grade II (≥ 100)	0	0		1 (5.0%)	0	
Hypertension status			0.385 ^b			0.039 ^b
No	9 (64.3%)	11 (84.6%)		12 (60.0%)	0	
Yes	5 (35.7%)	2 (15.4%)		8 (40.0%)	5 (100%)	
FPG (mg/dL)			>0.999 ^b			0.392 ^a
Normal (< 100)	12 (85.7%)	12 (92.3%)		15 (75.0%)	3 (60.0%)	
Moderate (100–125)	2 (14.3%)	1 (7.7%)		3 (15.0%)	2 (40.0%)	
High (≥ 126)	0	0		2 (10.0%)	0	
FIL ($\mu\text{IU/mL}$)			0.678 ^b			0.091 ^b
Normal (< 7)	11 (78.6%)	9 (69.2%)		19 (95.0%)	3 (60.0%)	
IR (≥ 7)	3 (21.4%)	4 (30.8%)		1 (5.0%)	2 (40%)	
HOMA- β (%)			0.089 ^a			0.041 ^a
Normal β -cell function (76.25–122.13)	10 (71.4%)	4 (30.8%)		16 (80.0%)	2 (40.0%)	
β -cell dysfunction (≤ 76.25)	3 (21.4%)	5 (38.4%)		2 (10.0%)	3 (60.0%)	
β -cell excessive function (≥ 122.13)	1 (7.1%)	4 (30.8%)		2 (10.0%)	0	
FIRI			0.568 ^a			0.160 ^b
Normal (≤ 0.77)	6 (42.9%)	7 (53.8%)		12 (60.0%)	1 (20.0%)	
IR (> 0.77)	8 (57.1%)	6 (46.2%)		8 (40.0%)	4 (80.0%)	

QUICKI			0.326 ^b			0.200 ^b
Normal (>0.339)	13 (92.9%)	10 (76.9%)		20 (100%)	4 (80.0%)	
IR (≤0.339)	1 (7.1%)	3 (23.1%)		0	1 (20.0%)	

^a χ^2 test; ^bFisher exact test. BMI, body mass index; SBP, systolic blood pressure; DBP, diastolic blood pressure; FPG, fasting plasma glucose; FIL, fasting insulin level; IR, insulin resistance; HOMA-IR, homeostatic model assessment of insulin resistance; HOMA- β , homeostasis model assessment of β -cell dysfunction; FIRI, fasting insulin resistance index; QUICKI, quantitative insulin sensitivity check index.

Table SIII. Comparison of patient's clinical characteristics and metabolic parameters among the different histopathological types of malignant ovarian neoplasms (in the form of categorical data).

Variables	Pathology of malignant ovarian neoplasm						P-value ^a
	Mucinous carcinoma	Clear cell carcinoma	Adeno-carcinoma	Endometrioid carcinoma	Serous carcinoma	Mixed type	
Young/old age (years)							0.242
Young (≤ 40)	3 (30.0%)	1 (16.7%)	3 (75.0%)	0	0	0	
Old (> 40)	7 (70.0%)	5 (83.3%)	1 (25.0%)	2 (100%)	2 (100%)	1 (100%)	
Menopausal status							0.303
Yes	4 (40.0%)	2 (33.3%)	2 (50.0%)	2 (100.0%)	2 (100%)	1 (100%)	
No	6 (60.0%)	4 (66.7%)	2 (50.0%)	0	0	0	
SBP (mmHg)							0.873
Normal (< 130)	3 (30.0%)	3 (50.0%)	3 (75.0%)	1 (50.0%)	1 (50.0%)	0	
High-normal (130-139)	2 (20.0%)	1 (16.7%)	1 (25.0%)	0	0	0	
Grade I (140-159)	3 (30.0%)	2 (33.3%)	0	1 (50.0%)	1 (50.0%)	1 (100%)	
Grade II (≥ 160)	2 (20.0%)	0	0	0	0	0	
DBP (mmHg)							0.797
Normal (< 85)	5 (50.0%)	3 (50.0%)	3 (75.0%)	1 (50.0%)	1 (50.0%)	0	
High-normal (85-89)	3 (30.0%)	1 (16.7%)	1 (25.0%)	0	1 (50.0%)	0	
Grade I (90-99)	1 (10.0%)	2 (33.3%)	0	1 (50.0%)	0	1 (100%)	
Grade II (≥ 100)	1 (10.0%)	0	0	0	0	0	
BMI Asia-Pacific classification (kg/m^2)							0.818
< 18.5 (Underweight)	4 (40.0%)	2 (33.3%)	2 (50.0%)	1 (50.0%)	1 (50.0%)	1 (100%)	
18.5-22.9 (Normal)	3 (30.0%)	3 (50.0%)	2 (50.0%)	1 (50.0%)	0	0	
23-24.9 (Overweight)	1 (10.0%)	0	0	0	1 (50.0%)	0	
≥ 25 (Obese)	0	1 (16.7%)	0	0	0	0	
BMI class							0.617
Lower-class BMI (normal + underweight)	7 (70.0%)	5 (83.3%)	4 (100%)	2 (100%)	1 (50.0%)	1 (100%)	
Higher-class BMI (overweight + obese)	3 (30.0%)	1 (16.7%)	0	0	1 (50.0%)	0	
FPG (mg/dL)							0.150
Normal (< 100)	7 (70.0%)	4 (66.7%)	3 (75.0%)	2 (100%)	2 (100%)	0	
Moderate (100-125)	2 (20.0%)	2 (33.3%)	1 (25.0%)	0	0	0	
High (≥ 126)	1	0	0	0	0	1	

	(10.0%)					(100%)	
FIL (μIU/mL)							0.384
Normal (<7)	10 (100%)	5 (83.3%)	3 (75.0%)	2 (100%)	1 (50.0%)	1 (100%)	
IR (≥7)	0	1 (16.7%)	1 (25.0%)	0	1 (50.0%)	0	
HOMA-IR							0.101
Normal (<1.208)	8 (80.0%)	5 (83.3%)	3 (75.0%)	2 (100%)	0	0	
IR (≥1.208)	2 (20.0%)	1 (16.7%)	1 (25.0%)	0	2 (100%)	1 (100%)	
HOMA-β (%)							0.620
Normal β-cell function (76.25-122.13)	8 (80.0%)	5 (83.3%)	1 (25.0%)	2 (100%)	1 (50.0%)	1 (100%)	
β-cell dysfunction (≤76.25)	1 (10.0%)	1 (16.7%)	2 (50.0%)	0	1 (50.0%)	0	
β-cell excessive function (≥122.13)	1 (10.0%)	0	1 (25.0%)	0	0	0	
FIRI							0.218
Normal (≤0.77)	6 (60.0%)	4 (66.7%)	1 (25.0%)	2 (100%)	0	0	
IR (>0.77)	4 (40.0%)	2 (33.3%)	3 (75.0%)	0	2 (100%)	1 (100%)	
QUICKI							0.654
Normal (>0.339)	10 (100%)	5 (83.3%)	4 (100%)	2 (100%)	2 (100%)	1 (100%)	
IR (≤0.339)	0	1 (16.7%)	0	0	0	0	

^aP-value indicated the statistical differences between the six pathology types of malignant ovarian neoplasm using the χ^2 test. BMI, body mass index; SBP, systolic blood pressure; DBP, diastolic blood pressure; FPG, fasting plasma glucose; FIL, fasting insulin level; HOMA-IR, homeostatic model assessment of insulin resistance; HOMA-β, homeostasis model assessment of β-cell dysfunction; FIRI, fasting insulin resistance index; QUICKI, quantitative insulin sensitivity check index.