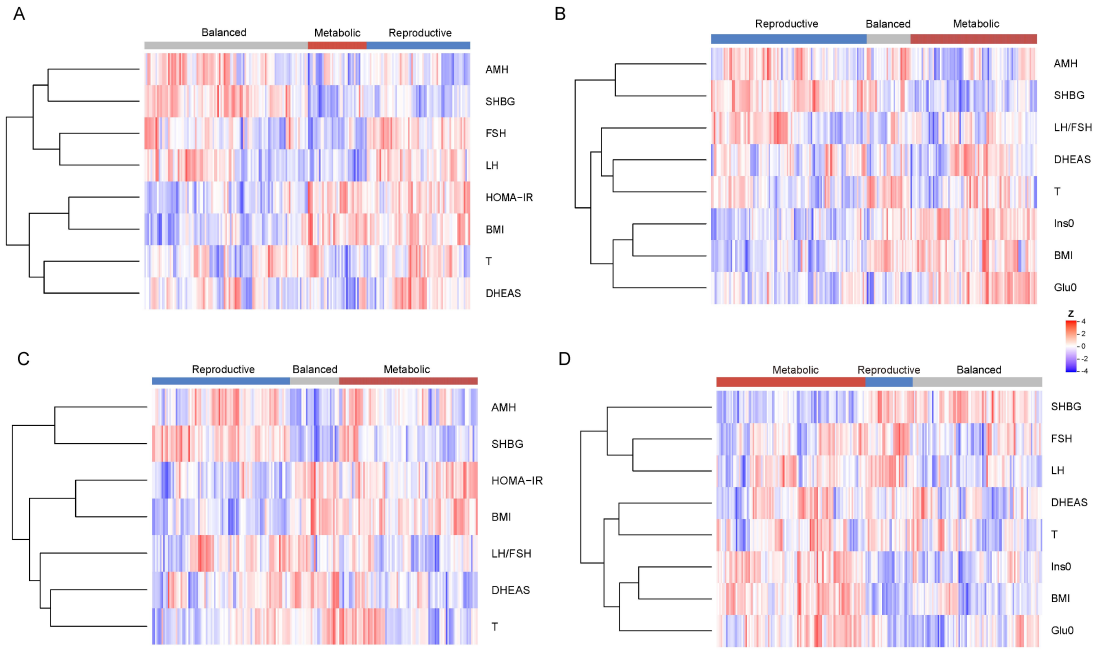
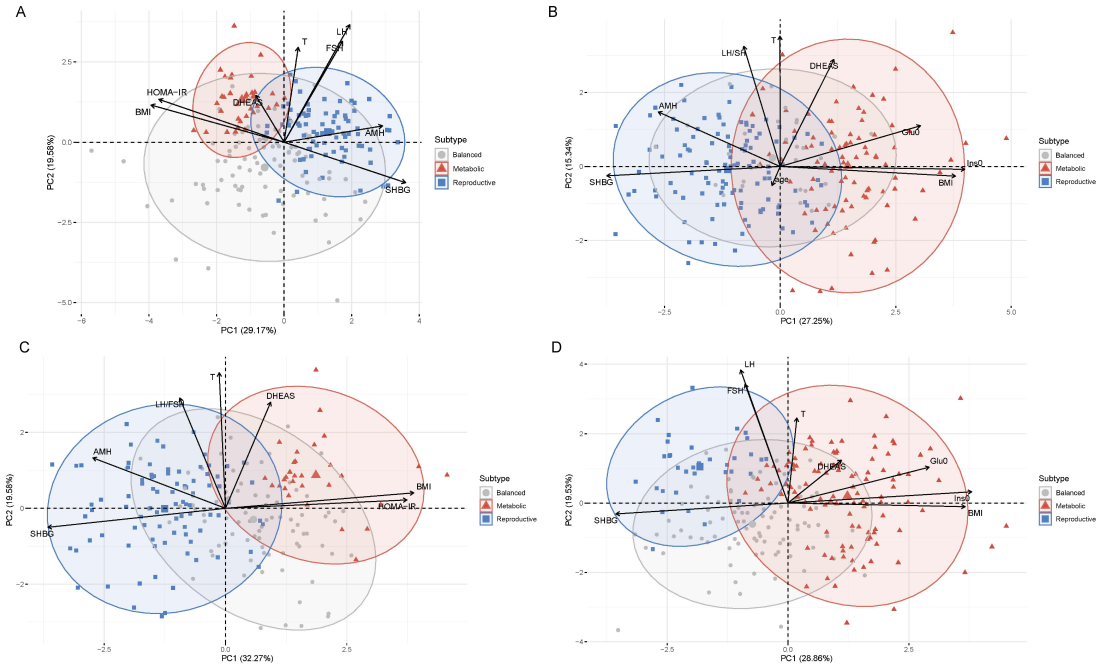


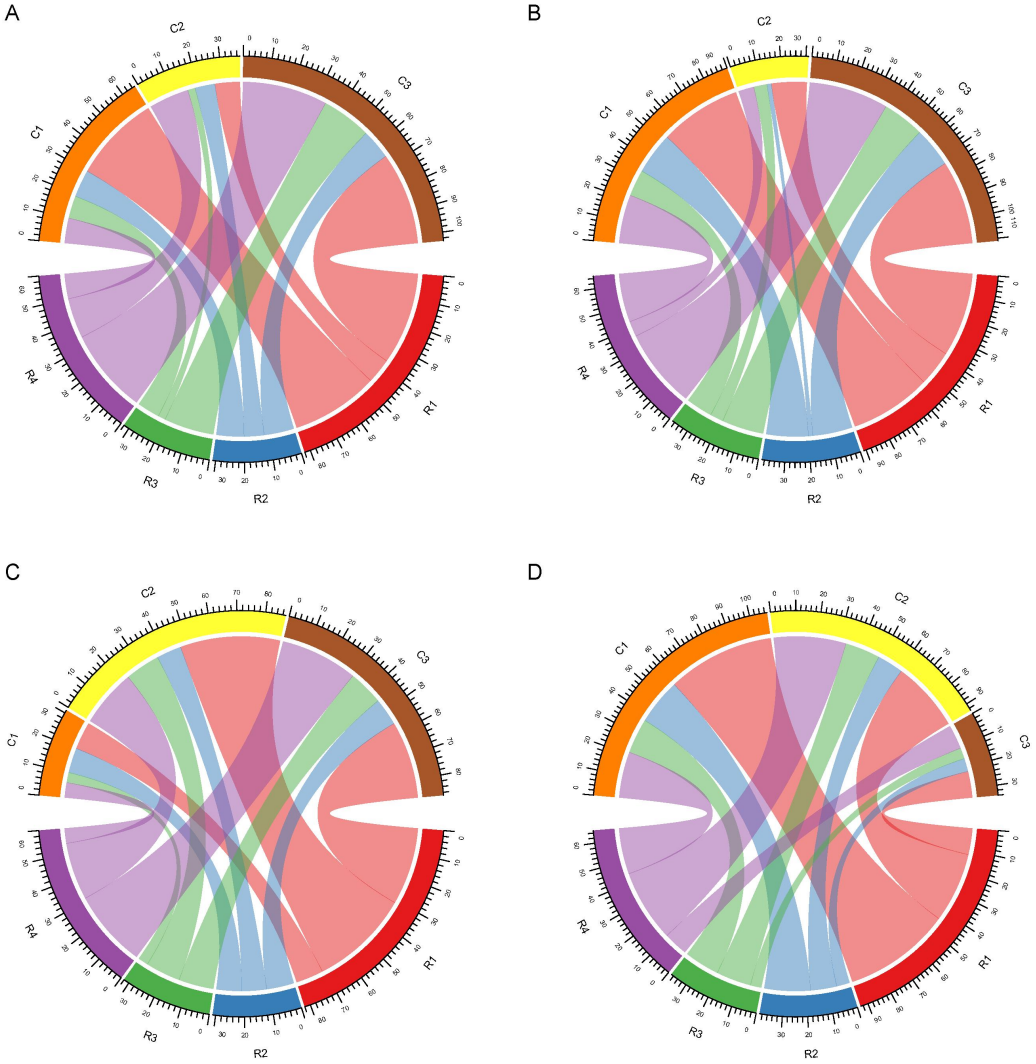
Supplementary Figure 1: Heatmaps of four different types of clustering of PCOS cohort. The results were presented separately for four different types of clustering of PCOS patients: (A) Redefined-1 Clustering, (B) Redefined-2 Clustering, (C) Redefined-3 Clustering, and (D) Redefined-4 Clustering. C1 refers to reproductive cluster, C2 refers to metabolic cluster, and C3 refers to balanced cluster. R1, R2, R3, and R4 refer to PCOS patients with (A) Full-blown, (B) Non-PCOM, (C) Ovulatory, and (D) Non-hyperandrogenic, respectively. Redefined-1 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, HOMA-IR, SHBG, LH, FSH, and AMH. Redefined-2 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, Ins0, Glu0, SHBG, LH/FSH, and AMH. Redefined-3 Clustering was performed in PCOS cases on seven adjusted quantitative traits: BMI, T, DHEAS, HOMA-IR, SHBG, LH/FSH, and AMH. Redefined-4 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, Ins0, Glu0, SHBG, LH, and FSH. Hierarchical clustering of PCOS patients according to adjusted continuous traits revealed three distinct phenotypic subtypes, “reproductive,” “metabolic,” and “balanced.” AMH: Anti-Müllerian hormone; BMI: Body mass index; DHEAS: Dehydroepiandrosterone sulfate; FSH:

Follicle-stimulating hormone; HOMA-IR: Homeostatic Model Assessment of Insulin Resistance; Ins0: Fasting insulin; LH: Luteinizing hormone; PCOS: Polycystic ovarian syndrome; SHBG: Sex hormone-binding globulin; T: Testosterone.



Supplementary Figure 2: PCA plot of continuous traits used for four different types of clustering of PCOS cohort. The results were presented separately for four different types of clustering of PCOS patients: (A) Redefined-1 Clustering, (B) Redefined-2 Clustering, (C) Redefined-3 Clustering, and (D) Redefined-4 Clustering. C1 refers to reproductive cluster, C2 refers to metabolic cluster, and C3 refers to balanced cluster. R1, R2, R3, and R4 refer to PCOS patients with (A) Full-blown, (B) Non-PCOM, (C) Ovulatory, and (D) Non-hyperandrogenic, respectively. Redefined-1 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, HOMA-IR, SHBG, LH, FSH, and AMH. Redefined-2 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, Ins0, Glu0, SHBG, LH/FSH, and AMH. Redefined-3 Clustering was performed in PCOS cases on seven adjusted quantitative traits: BMI, T, DHEAS, HOMA-IR, SHBG, LH/FSH, and AMH. Redefined-4 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, Ins0, Glu0, SHBG, LH, and FSH. Metabolic, reproductive, and balanced PCOS clusters are shown as 95% concentration

ellipses, assuming bivariate normal distributions. The direction of trait and relative magnitude correlations with the PCs were shown with black arrows. AMH: Anti-Müllerian hormone; BMI: Body mass index; DHEAS: Dehydroepiandrosterone sulfate; FSH: Follicle-stimulating hormone; HOMA-IR: Homeostatic Model Assessment of Insulin Resistance; Ins0: Fasting insulin; LH: Luteinizing hormone; SHBG: Sex hormone-binding globulin; T: Testosterone.



Supplementary Figure 3: Chord diagram of the relations between four different types of clustering and different phenotypic subgroups of Rotterdam criteria. This figure illustrates the proportions of the typical presentations identified by clustering analysis (upper) by different phenotypic subgroups of Rotterdam criteria (lower). The results were presented separately for four different types of clustering of PCOS patients: (A) Redefined-1 Clustering, (B) Redefined-2 Clustering, (C) Redefined-3 Clustering, and (D) Redefined-4 Clustering. C1 refers to reproductive cluster, C2 refers to metabolic cluster, and C3 refers to balanced cluster. R1, R2, R3, and R4 refer to PCOS patients with (A) Full-blown, (B) Non-PCOM, (C) Ovulatory, and (D) Non-hyperandrogenic, respectively. Redefined-1 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, HOMA-IR, SHBG, LH, FSH, and AMH. Redefined-2 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, Ins0, Glu0, SHBG, LH/FSH, and AMH. Redefined-3 Clustering was performed in PCOS cases on seven adjusted quantitative traits: BMI, T, DHEAS, HOMA-IR, SHBG, LH/FSH, and AMH. Redefined-4 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, Ins0, Glu0, SHBG, LH, and FSH. AMH: Anti-Müllerian hormone; BMI: Body mass index; DHEAS: Dehydroepiandrosterone sulfate; FSH: Follicle-stimulating hormone; Glu0: Fasting glucose; HA: Hyperandrogenism; HOMA-IR: Homeostatic Model Assessment of Insulin Resistance; Ins0: Fasting insulin; LH: Luteinizing hormone; OD: Ovulatory dysfunction; PCOM: Polycystic ovarian morphology; PCOS: Polycystic ovarian syndrome; SHBG: Sex hormone-binding globulin; T: Testosterone.

Supplementary Table 1: Baseline characteristics of PCOS patients in four different types of clustering.

Characteristics	Redefined-1 Cluster				Redefined-2 Cluster				Redefined-3 Cluster				Redefined-4 Cluster			
	Reproductive (*n* = 65)	Metabolic (*n* = 37)	Balanced (*n* = 103)	*P*-value	Metabolic (*n* = 90)	Balanced (*n* = 31)	Reproductive (*n* = 111)	*P*-value	Metabolic (*n* = 31)	Balanced (*n* = 87)	Reproductive (*n* = 87)	*P*-value	Metabolic (*n* = 107)	Balanced (*n* = 93)	Reproductive (*n* = 34)	*P*-value
Age	30 (27.3–32)	28 (26–29.8)	29 (27.5–31)	0.089	29 (27–31)	31 (28–32)	29 (27–31)	0.258	29 (27–31)	30 (27–32)	29 (27–31)	0.923	29 (27–31)	30 (28–33)	29 (27.8–30)	0.026*
Year of infertility	3 (2–5)	3.5 (2–5)	3 (1–4)	0.024*	3 (2–5)	4 (2–5)	3 (1–4)	0.040*	3 (2–4.8)	3 (2–5)	2 (1–4)	0.016*	3 (2–5)	3 (1–5)	2 (1–5)	0.003*
Type of infertility: Primary	61.29% (38/62)	70.27% (26/37)	68.04% (66/97)	0.580	65.9% (58/88)	71.0% (22/31)	67.3% (70/104)	0.875	48.39% (15/31)	72.62% (61/84)	66.67% (54/81)	0.659	62.9% (66/105)	67.8% (61/90)	82.8% (24/29)	0.128
Type of infertility: Secondary	38.71% (24/62)	29.73% (11/37)	31.96% (31/97)		34.1% (30/88)	29.0% (9/31)	32.7% (34/104)		51.61% (16/31)	27.38% (23/84)	33.33% (27/81)		37.1% (39/105)	32.2% (29/90)	17.2% (5/29)	
Height	158 (155–160)	158.5 (155–162)	158 (156.5–160.5)	0.375	159 (155–161)	158 (155–160)	158 (157–160)	0.271	157.5 (155–160)	158 (155–162)	158 (156–160.3)	0.123	158 (155–161)	158 (157–160.3)	158 (155–160.8)	0.282
Weight	60 (56.6–66.5)	63.5 (59–70)	52 (50–58)	<0.001*	61 (58–70)	62 (60–65)	52 (49–56)	<0.001*	60 (58–69.8)	60 (57–67)	52 (48–55)	<0.001*	60 (57.5–70)	55 (52–59.1)	49.5 (47.9–51.6)	<0.001*
BMI	24 (22.9–26.6)	25.4 (23.6–28)	20.8 (19.5–22.6)	<0.001*	24.6 (23.1–27.3)	25.5 (23.5–27)	20.8 (19.5–22)	<0.001*	24.8 (23.3–27.5)	24 (22.9–26.3)	20.5 (19.2–21.7)	<0.001*	24.4 (23.1–27.2)	21.5 (20.3–23.4)	19.7 (18.3–20.6)	<0.001*
E2	45.9 (37.7–55.3)	35.9 (27.1–50.1)	44.1 (34.6–55.1)	0.030*	41 (32.6–56.1)	46.3 (38.1–52.6)	43.8 (33.9–54.1)	0.792	40 (32.1–59.6)	42.2 (35.5–51.2)	44.5 (35.6–55.3)	0.441	45.8 (35.8–56.2)	40.4 (31.7–47.9)	46.5 (39.4–72.9)	0.200

P	0.6 (0.4–0.7)	0.6 (0.4–0.7)	0.6 (0.4–0.7)	0.855	0.6 (0.4–0.7)	0.5 (0.3–0.6)	0.6 (0.4–0.7)	0.509	0.7 (0.6–0.8)	0.4 (0.3–0.6)	0.6 (0.4–0.7)	<0.001*	0.6 (0.4–0.7)	0.5 (0.3–0.7)	0.5 (0.4–0.7)	0.459
T	0.4 (0.4–0.6)	0.3 (0.2–0.4)	0.4 (0.3–0.5)	<0.001*	0.4 (0.3–0.5)	0.7 (0.5–0.9)	0.4 (0.3–0.5)	<0.001*	0.4 (0.4–0.5)	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.041*	0.4 (0.3–0.5)	0.4 (0.3–0.5)	0.5 (0.4–0.6)	0.010*
DHEAS	237.5 (167.3–287.3)	186 (150.3–282.3)	210 (150.5–259.5)	0.086	239 (161–308)	192 (158–242)	210 (159–259)	0.127	308 (256.8–382.8)	179 (143–227)	217 (157.5–262.3)	<0.001	221 (166.5–308)	198 (115.3–259)	214 (172–273.5)	0.100
A	3.7 (3.3–4.5)	3.3 (2.6–3.7)	3.7 (3.1–4.4)	0.036*	3.6 (3.1–4.7)	3.5 (2.9–4.4)	3.5 (3–4.3)	0.917	3.7 (3.1–4.8)	3.6 (3–4.4)	3.6 (3–4.3)	0.709	3.7 (3.3–4.5)	3.3 (2.6–4.3)	3.6 (3–4.3)	0.429
SHBG	26.6 (20.1–37.1)	21.7 (14.3–29.2)	57.3 (40.2–76)	<0.001*	21.7 (15.3–29.7)	40.1 (29.5–67.2)	55.1 (37.7–70.4)	<0.001*	19 (13–21.7)	32.6 (24–40.6)	56.8 (44–73.7)	<0.001*	25.2 (19–34.6)	57.2 (39.1–74.2)	60 (51.2–76.8)	<0.001*
FAI	7 (4.2–9.1)	6 (2.9–11.4)	2.5 (1.6–4.3)	<0.001*	7 (4.2–11.1)	5.2 (2.7–7.7)	2.5 (1.6–4)	<0.001*	9.4 (6.7–12.9)	4.9 (2.8–7.6)	2.3 (1.5–3.6)	<0.001*	6.6 (4.1–9.2)	2.5 (1.5–4.3)	2.1 (1.7–3.3)	<0.001*
FSH	7.7 (6.6–8.4)	4.7 (3.5–5.5)	6.4 (5.5–8)	<0.001*	6.7 (5.1–7.7)	6.6 (5.9–7.7)	6.5 (5.5–8.3)	0.843	6.7 (5.4–7.4)	6.6 (5.5–7.9)	6.4 (5.4–8.2)	0.941	6.6 (5.5–7.7)	6.2 (5.2–7.4)	8.5 (6.7–9.3)	<0.001*
LH	12.1 (7.9–15)	3.8 (1.8–6.4)	7.8 (4.8–14.2)	<0.001*	7.8 (5.6–13)	7 (3.7–12.4)	9.4 (5.1–15)	0.387	10.1 (7.1–14.9)	6.5 (3.6–11)	9.8 (5.8–15.4)	<0.001*	9.4 (5.8–14.5)	6.1 (3.6–8.4)	15 (10.8–19)	<0.001*
LH/FSH	1.5 (1.1–2)	1 (0.4–1.4)	1.3 (0.8–2.1)	0.002*	1.3 (0.9–1.8)	1.2 (0.7–1.7)	1.4 (0.8–2.1)	0.319	1.7 (1.2–2.1)	1.1 (0.7–1.5)	1.5 (1–2.2)	<0.001*	1.5 (0.9–2)	1 (0.6–1.4)	2.1 (1.5–2.4)	<0.001*

HOMA-IR	3.3 (2.3–4.6)	3.7 (2.9–5.3)	1.5 (1.1–2.3)	<0.001*	3.7 (3.1–5.4)	2.8 (2.2–3.6)	1.5 (1.1–2)	<0.001*	3.8 (3.2–5)	3 (1.8–4)	1.5 (1.1–2.3)	<0.001*	3.4 (2.4–5)	1.7 (1.2–2.5)	1.2 (0.9–1.5)	<0.001*
Glu0	5.2 (4.9–5.4)	5.1 (4.8–5.3)	4.9 (4.6–5.1)	<0.001*	5.2 (5–5.5)	4.8 (4.4–5)	4.9 (4.7–5.1)	<0.001*	5.2 (5–5.6)	5 (4.7–5.3)	4.9 (4.7–5.1)	<0.001*	5.2 (4.9–5.4)	4.9 (4.6–5.1)	4.8 (4.5–5.1)	<0.001*
Ins0	14.7 (10.4–19.1)	15.8 (12.6–23.9)	6.9 (5.3–10.3)	<0.001*	16.1 (13.1–23.6)	12.3 (10.3–16.7)	6.9 (5.3–9.2)	<0.001*	16.4 (13.7–20.6)	13.1 (8.6–18.6)	6.7 (5.2–10.3)	<0.001*	15.1 (11.1–21.1)	7.7 (5.4–11.4)	5.5 (4.4–7)	<0.001*
AMH	7.4 (4.5–10.4)	6.1 (3.4–10.5)	10.7 (5.8–15.6)	<0.001*	5.4 (3.8–10.4)	12 (7.5–16.7)	10 (5.7–14.6)	<0.001*	4.5 (3.2–6.6)	8 (5.4–12.8)	10.6 (5.8–14.8)	<0.001*	7.1 (4.5–10.9)	9.1 (5.6–14.6)	12.9 (9.6–15.6)	<0.001*
PCOM	83.08% (54/65)	78.38% (29/37)	88.35% (91/103)	0.309	78.89% (71/90)	93.55% (29/31)	83.78% (93/111)	0.166	67.74% (21/31)	88.51% (77/87)	87.36% (76/87)	0.015*	80.37% (86/107)	87.10% (81/93)	82.35% (28/34)	0.439
OD	84.62% (55/65)	91.89% (34/37)	80.58% (83/103)	0.271	84.44% (76/90)	80.65% (25/31)	82.88% (92/111)	0.881	83.87% (26/31)	83.91% (73/87)	83.91% (73/87)	1.000	83.18% (89/107)	82.80% (77/93)	85.29% (29/34)	0.944
HA	84.62% (55/65)	56.76% (21/37)	66.99% (69/103)	0.006*	76.67% (69/90)	77.42% (24/31)	67.57% (75/111)	0.285	80.65% (25/31)	73.56% (64/87)	64.37% (56/87)	0.173	81.31% (87/107)	64.52% (60/93)	67.65% (23/34)	0.023*

Redefined-1 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, HOMA-IR, SHBG, LH, FSH, and AMH.

Redefined-2 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, Ins0, Glu0, SHBG, LH/FSH, and AMH.

Redefined-3 Clustering was performed in PCOS cases on seven adjusted quantitative traits: BMI, T, DHEAS, HOMA-IR, SHBG, LH/FSH, and AMH.

Redefined-4 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, Ins0, Glu0, SHBG, LH, and FSH. Quantitative trait values were first loge-normalized and adjusted for age and assay method, which varied according to the different study sites where samples were collected, using a linear regression.

A: Androstadienone; AMH: Anti-Müllerian hormone; BMI: Body mass index; DHEAS: Dehydroepiandrosterone sulfate.; E2: Estradiol; FAI: Free androgen index; FSH: Follicle-stimulating hormone; Glu0: Fasting glucose; HA: Hyperandrogenism (hirsutism, alopecia, hyperandrogenemia).; HOMA-IR: Homeostatic Model Assessment of Insulin Resistance; Ins0: Fasting insulin; LH: Luteinizing hormone; OD: Ovulatory dysfunction; P: Progesterone; PCOM: Polycystic ovarian morphology; PCOS: Polycystic ovarian syndrome; SHBG: Sex hormone-binding globulin; T: Testosterone.

*P-value <0.05 between different clusters.

Supplementary Table 2: COS parameters and clinical outcomes of PCOS patients in four different types of clustering.

	Redefined-1 Cluster				**Redefined-2 Cluster**				**Redefined-3 Cluster**				**Redefined-4 Cluster**			
Characteristics	**Reproductive (*n* = 65)**	**Metabolic (*n* = 37)**	**Balanced (*n* = 103)**	***P*-value**	**Metabolic (*n* = 90)**	**Balanced (*n* = 31)**	**Reproductive (*n* = 111)**	***P*-value**	**Metabolic (*n* = 31)**	**Balanced (*n* = 87)**	**Reproductive (*n* = 87)**	***P*-value**	**Metabolic (*n* = 107)**	**Balanced (*n* = 93)**	**Reproductive (*n* = 34)**	***P*-value**
Gn stimulation time	10 (9–11)	10 (10–12)	10 (9–11)	0.029*	10 (9–12)	10 (9–13)	10 (9–11)	0.051	11 (9–11.8)	10 (9–12)	10 (9–11)	0.087	10 (9–12)	10 (9–11)	9 (8–11)	0.074
Total Gn dose	1800 (1556.3–2287.5)	2137.5 (1668.8–2606.3)	1575 (1275–1919)	<0.001*	1950 (1575–2475)	2100 (1675–2775)	1575 (1275–1875)	<0.001*	2025 (1600–2531.3)	1925 (1600–2475)	1475 (1275–1812.5)	<0.001*	1950 (1500–2475)	1712.5 (1425–2025)	1350 (1125–1725)	<0.001*
No. of oocytes with a diameter	10 (8–12)	9.5 (8–12)	12 (9.5–14)	0.001*	10 (8–12)	10 (8–12)	12 (9–14)	0.065	8 (6.3–10)	10 (9–12)	12 (10–14)	<0.001*	10 (8–12)	11 (9–14)	13 (10–15)	0.006*

≥14 mm on TD																
E2 on TD	3984.5 (2604.8–6033.6)	3179.8 (2238.8–4985.3)	5050.6 (3354.2–7664)	0.001*	3215 (2184.5–4565.5)	5029.6 (3017.7–6851.7)	5050.6 (3467.5–7597)	<0.001*	2939.3 (1900–4049.7)	4049.9 (2624.4–5950.2)	5343.1 (3543–7757.8)	<0.001*	3783.4 (2422.8–5295.6)	4611.1 (3170.5–7339.5)	6814.6 (4126.2–7833.4)	<0.001*
P on TD	1 (0.7–1.3)	0.9 (0.7–1)	1.2 (0.8–1.6)	0.013*	0.9 (0.7–1.2)	0.9 (0.7–1.1)	1.2 (0.9–1.6)	0.003*	1 (0.7–1.3)	0.9 (0.7–1.2)	1.3 (0.9–1.7)	<0.001*	1 (0.7–1.3)	1.1 (0.8–1.5)	1.1 (0.7–1.5)	0.323
LH on TD	2.2 (1.1–4.2)	1.7 (0.7–3.1)	2 (0.9–3.5)	0.482	2.3 (0.9–4.1)	2.1 (1.4–3.9)	1.9 (1–3.5)	0.893	2.4 (1.4–2.9)	2 (0.7–4.1)	1.8 (0.9–3.5)	0.842	2.3 (1.1–4.1)	1.8 (0.8–3.3)	2 (0.9–4.5)	0.348
Endometrium thickness on TD	5 (4.1–6)	5.4 (4.5–6.4)	4.8 (4.1–5.5)	0.025*	5.4 (4.5–6.2)	4.5 (4–5.5)	4.9 (4.2–5.6)	0.056	5 (4.1–5.8)	5 (4.2–5.8)	5 (4.2–5.7)	0.306	5.3 (4.5–6)	4.8 (4–5.4)	5 (4.4–5.7)	0.014*
No. of retrieved follicles	16 (10.3–21)	14 (9–18.8)	17 (12–22)	0.453	14 (10–19)	16 (10–20)	17 (12–22)	0.297	11.5 (6.3–18)	16 (12–20)	17.5 (13.8–23)	0.004*	15 (10.5–21)	17 (12–20)	16 (11.5–22)	0.550
MII rate	85.13% (910/1069)	84.91% (495/583)	85.77% (1525/1778)	0.830	82.49% (1164/1411)	91.20% (477/523)	85.59% (1633/1908)	<0.001*	87.50% (350/400)	84.71% (1241/1465)	85.56% (1339/1565)	0.367	84.05% (1465/1743)	86.93% (1377/1584)	83.15% (444/534)	0.026*
2PN rate	58.09% (621/1069)	62.61% (365/583)	63.72% (1133/1778)	0.010*	58.61% (827/1411)	65.20% (341/523)	63.31% (1208/1908)	0.005*	61.50% (246/400)	59.39% (870/1465)	64.09% (1003/1565)	0.029*	59.50% (1037/1743)	64.27% (1018/1584)	61.61% (329/534)	0.018*
IVF fertility rate	75.49% (807/1069)	79.93% (466/583)	70.64% (1256/1778)	<0.001*	73.14% (1032/1411)	83.94% (439/523)	70.81% (1351/1908)	<0.001*	86.75% (347/400)	73.92% (1083/1465)	70.22% (1099/1565)	<0.001*	74.47% (1298/1743)	73.74% (1168/1584)	68.91% (368/534)	0.037*

ICSI fertility rate	83.93% (47/56)	94.12% (16/17)	83.76% (165/197)	0.666	94.05% (79/84)	75.00% (12/16)	82.32% (163/198)	0.012*	100.00% (3/3)	78.26% (72/92)	87.43% (153/175)	0.133	87.76% (86/98)	85.52% (124/145)	79.31% (46/58)	0.351
Good quality D3 embryo rate	37.92% (306/807)	37.34% (174/466)	41.00% (515/1256)	0.232	38.86% (401/1032)	37.81% (166/439)	41.89% (566/1351)	0.180	35.45% (123/347)	37.30% (404/1083)	42.58% (468/1099)	0.011*	37.06% (481/1298)	42.72% (499/1168)	42.39% (156/368)	0.010*
Available D3 embryo rate	69.95% (582/832)	75.58% (359/475)	73.44% (1023/1393)	0.063	71.35% (777/1089)	71.81% (321/447)	75.03% (1109/1478)	0.087	68.71% (235/342)	72.86% (827/1135)	73.75% (902/1223)	0.179	71.13% (966/1358)	74.70% (945/1265)	75.19% (303/403)	0.074
Blastocyst formation rate	68.41% (301/440)	69.20% (182/263)	73.84% (607/822)	0.084	68.74% (398/579)	68.18% (165/242)	74.38% (662/890)	0.029*	70.83% (119/168)	68.2% (416/610)	74.30% (555/747)	0.046*	69.09% (503/728)	74.83% (562/751)	68.94% (162/235)	0.031*
Good quality blastocyst rate	31.23% (94/301)	24.18% (44/182)	30.31% (184/607)	0.212	29.40% (117/398)	28.48% (47/165)	31.27% (207/662)	0.703	29.41% (35/119)	25.00% (104/416)	32.97% (183/555)	0.026*	27.24% (137/503)	32.92% (185/562)	30.86% (50/162)	0.130
Available blastocyst rate	86.05% (259/301)	90.11% (164/182)	89.95% (546/607)	0.180	89.70% (357/398)	86.67% (143/165)	89.73% (594/662)	0.499	93.28% (111/119)	89.66% (373/416)	87.39% (485/555)	0.146	88.67% (446/503)	90.04% (506/562)	88.27% (143/162)	0.705
Fresh ET cancelation rate	60.00% (39/65)	56.76% (21/37)	80.58% (83/103)	0.003*	54.4% (49/90)	71.0% (22/31)	77.5% (86/111)	0.002*	54.84% (17/31)	60.92% (53/87)	83.91% (73/87)	0.001*	60.7% (65/107)	72.0% (67/93)	79.4% (27/34)	0.070
Clinical pregnancy rate after fresh ET	34.62% (9/26)	37.50% (6/16)	40.00% (8/20)	0.945	36.59% (15/41)	22.22% (2/9)	36.00% (9/25)	0.788	42.86% (6/14)	29.41% (10/34)	50.00% (7/14)	0.357	33.33% (14/42)	34.62% (9/26)	42.86% (3/7)	0.878

OHSS rate	1.54% (1/65)	0% (0/37)	3.88% (4/103)	0.583	0% (0/90)	3.2% (1/31)	3.6% (4/111)	0.129	0% (0/31)	1.15% (1/87)	4.60% (4/87)	0.374	1.9% (2/107)	2.2% (2/93)	2.9% (1/34)	0.848

Redefined-1 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, HOMA-IR, SHBG, LH, FSH, and AMH.

Redefined-2 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, Ins0, Glu0, SHBG, LH/FSH, and AMH.

Redefined-3 Clustering was performed in PCOS cases on seven adjusted quantitative traits: BMI, T, DHEAS, HOMA-IR, SHBG, LH/FSH, and AMH.

Redefined-4 Clustering was performed in PCOS cases on eight adjusted quantitative traits: BMI, T, DHEAS, Ins0, Glu0, SHBG, LH, and FSH. Quantitative trait values were first loge-normalized and adjusted for age and assay method, which varied according to the different study sites where samples were collected, using a linear regression.

BMI: Body mass index; COS: Controlled ovarian stimulation; DHEAS: Dehydroepiandrosterone sulfate; E2: Estradiol; ET: Embryo transfer; Glu0: Fasting glucose; Gn: Gonadotrophin; HOMA-IR: Homeostatic Model Assessment of Insulin Resistance; ICSI: Intracytoplasmic sperm injection; IVF: *In vitro* fertilization; LH: Luteinizing hormone; MII: Mature; OHSS: Ovarian hyperstimulation syndrome; P: Progesterone; PCOM: Polycystic ovarian morphology; PCOS: Polycystic ovarian syndrome; SHBG: Sex hormone-binding globulin; TD: Trigger day.

*P-value <0.05 between different clusters.