

PCOS with metabolic disorders: Treatment with insulin sensitizer and lifestyle change

w huang (CN) [1], j tan (CN) [2], q wang (CN) [3], g zhou (CN) [4], t liu (CN) [5]

Objective? To compare the effects of Metformin (Met), Rosiglitazone (Ros), or combination of Metformin and Rosiglitazone (M+R) in improvement clinical and metabolic parameters in obese Chinese PCOS women.

Design: Randomized control trial.

Setting: West China Second University Hospital, SCU, China.

Patients: 204 Obese Chinese women fulfilled the Rotterdam criteria of PCOS and diagnosed with insulin resistance (HOMA-IR >2.77)

Interventions: Patients were treated with Metformin 1500mg/d (Met), or Rosiglitazone 4mg/d (Ros), or combination of Metformin 1000mg/d plus Rosiglitazone 4mg/d (M+R) for continuous use of 6 months. Meantime, lifestyle as dietary and exercise were asked and monitored to all participants.

Main outcome Measures: Clinical features [(menstrual cycle, hyperandrogenism as hirsutism or acne, body weight, waist circumference and waist-to-hip ratio (WHR)) and biochemical parameters (serum free testosterone, LH-FSH ratio, fasting glucose, fasting insulin, HOMA-IR).

Results: About half of participants revealed their menstrual cycle recovery to normal or shorter than baseline. The clinical symptoms as acne or hirsutism were improved and androgen levels decreased after 6 months treatment. BMI decreased in three groups when compared to baseline (24.06±2.21 vs. 27.64±2.47 in Met group, 22.24±2.75 vs. 27.71±2.84 in Ros group, 25.01±2.21 vs. 27.41±2.34 in M+R group. Notably, HOMA-IR were improved in three groups (3.12±1.93 vs. 5.62±2.54 in Metformin, 3.40±1.50 vs. 5.64±2.18 in Rosiglitazone, 2.85±1.13 vs. 5.53±1.91 in Met plus Ros), although no significant difference among them was observed. The main side effect of Metformin was gastrointestinal reactions, no side effect was found in Rosiglitazone users.

Conclusions: IR is so popular in obese Chinese PCOS women. Except lifestyle, insulin sensitizers Metformin and Rosiglitazone are safe and effective in improvement of insulin sensitivity and clinical characteristics.

Key words: Polycystic ovary syndrome (PCOS); Obesity; Insulin resistance; Metformin; Rosiglitazone

[1] West China Second University Hospital, SCU, Chengdu, [2] West China Second University Hospital of Sichuan University, [3] West China Second University Hospital of Sichuan University, [4] West China Second University Hospital of Sichuan University, [5] West China Second University Hospital of Sichuan University