Effect of Metformin and Pioglitazone Treatment on Cardiovascular Risk Profile in Polycystic Ovary Syndrome

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ABSTRACT

Aim: to compare the effectiveness of metformin and pioglitazone in ameliorating insulin resistance and cardiovascular risk factors in women with polycystic ovary syndrome (PCOS). Methods: this study was a randomized clinical trial to compare treatment with metformin and pioglitazone. Fifty two women with PCOS aged 20-45 years were randomly allocated to one of the two treatment groups. All patients underwent clinical and biochemical evaluation and analyses involving these measures which consisted of repeated measures MANOVA using the pre- and post-intervention fasting blood sugar (FBS), lipid profiles, body mass index (BMI), serum insulin in two groups. Results: weight and BMI were significantly decreased in metformin group but not in case of pioglitazone. FBS, serum triglycerides, total cholesterol were all reduced significantly by both metformin and pioglitazone. Insulin resistance measured by homeostasis model assessment (HOMA) method was significantly decreased in both treatment groups (P<0.05). There were no significant differences between treatments in most of variables except BMI. Conclusion: these results suggest pioglitazone is as effective as metformin in improving insulin sensitivity and some cardiovascular risk biomarkers but it has no significant effect on reducing BMI and body weight.

Key words: polycystic ovary syndrome, metformin, pioglitazone, insulin resistance, cardiovascular risk factor.