

Metformin Helps Metabolic Parameters in PCOS

BY DIANA MAHONEY
New England Bureau

BOSTON — Treatment with metformin significantly improves body mass index and other metabolic parameters in women with polycystic ovary syndrome and significantly decreases the prevalence of metabolic syndrome in this population, a retrospective study has shown.

The findings confirm the utility of metformin, coupled with diet and exercise, as

a primary therapy for minimizing the long-term risks of developing metabolic syndrome—associated cardiovascular disease and diabetes in women with the hormonal disorder, Kai I. Cheang, Pharm.D., said at the Fifth Annual World Congress on the Insulin Resistance Syndrome.

To date, short-term studies have demonstrated beneficial metabolic effects associated with metformin in women with polycystic ovary syndrome (PCOS), but long-term data have been lacking, ac-

ording to Dr. Cheang, of Virginia Commonwealth University, Richmond.

To assess the impact of long-term metformin use, Dr. Cheang and colleagues reviewed the charts of consecutive PCOS patients treated at the university-affiliated clinic from 2000 to 2005. Patients with more than 6 months of treatment with metformin were included in the final analysis if baseline and follow-up assessments of metabolic syndrome parameters were available. Those patients with dia-

betes at baseline and those taking other medications that would affect metabolic parameters, such as thiazolidinediones, weight-loss agents, antihypertensives, lipid-lowering agents, or antidiabetic agents, were excluded.

Of the nearly 250 PCOS patients treated with metformin during the study period, 71 met the inclusion criteria; their mean age was 31.2 years. For the purposes of the investigation, metabolic syndrome was defined by National Cholesterol Education Program Adult Treatment Panel III (ATP-III) criteria, with the exception of waist circumference; body mass index (BMI) was substituted for that criterion.

“This is because waist circumference was not available for most of the patients,” Dr. Cheang noted. “Based on correlation between BMI and waist circumference of local PCOS women with [that of] PCOS women who entered into our clinical studies, we determined the BMI cut-off value corresponding to a waist circumference of 88 cm was 32 kg/m²,” she reported.

The average period from initiation of metformin therapy to the most recent assessment for the study population was 31 months. The data for those patients who began lipid-lowering or antihypertensive therapy during follow-up were analyzed up until the beginning of such therapy, according to Dr. Cheang.

The investigators assessed baseline and follow-up metabolic syndrome parameters using a two-sided student's paired t test and observed that, compared with baseline, follow-up values for BMI, diastolic blood pressure, and high-density lipoprotein were significantly improved with metformin therapy, Dr. Cheang reported. Additionally, metformin therapy also significantly decreased the overall prevalence of metabolic syndrome from 31% at baseline to 14% following 31 months of treatment. Observed improvements in systolic blood pressure, triglycerides, and fasting glucose measures did not reach statistical significance.

The findings were limited by the study's retrospective design, Dr. Cheang said. “As information was not being collected specifically for the study, certain data [were] not available for all patients.”

According to study coauthor Dr. John E. Nestler, chair of the university's division of endocrinology and metabolism, previous studies have shown that treatment with metformin, coupled with diet and exercise, improves ovulation and lowers androgens in PCOS women and possibly prevents or retards progression to glucose intolerance.

With this new data, “[metformin treatment] also appears to ameliorate several components of the metabolic syndrome,” he said in an interview.

The clinical significance of these findings is substantial, given the extremely high risk for the metabolic disorder in PCOS. “Among women with PCOS, approximately 20% of those younger than 20 years old have the metabolic syndrome and more than 50% of those 40 years and older have it,” he said.

No conflicts of interest were reported relative to this study. ■



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- Dose range of 60 mg to 120 mg every 4 weeks (2)
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- Glucose Metabolism: Hypo- and/or hyperglycemia may occur. Glucose monitoring is recommended and anti-diabetic treatment adjusted accordingly (5.2)
- Cardiac Function: Decrease in heart rate may occur. Use with caution in at-risk patients (5.3)

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- Hepatic Impairment: Start dose is 60 mg in moderate and severe hepatic impairment (2, 8.6, 12.3)

See 17 for PATIENT COUNSELING INFORMATION and FDA-approved patient labeling.

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References: 1. Somatuline[®] Depot (lanreotide) Injection [prescribing information]. Paris, France: Beaufour Ipsen Pharma; 2007. 2. Sandostatin LAR[®] Depot [prescribing information]. East Hanover, NJ: Novartis Pharmaceuticals Corporation; 2006. 3. Data on file. Brisbane, Calif: Tercica, Inc.; 2007. 4. IMS Health. Market data, April 2007.

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