Moderate Weight Losses Fail to Benefit in PCOS

By Jeff Evans
Senior Writer

Overweight women with polycystic ovary syndrome may need to lose more than 5% of their weight to see improvement in inflammatory markers, reported Lisa J. Moran of the University of Adelaide (Australia) and her colleagues.

At the end of an 8-week, prospective study of the effect of dieting on metabolic risk factors and inflammatory markers, 15 women with polycystic ovary syndrome (PCOS) and 17 women without PCOS lost weight (mean of 3.9 kg [4%] vs. 4.3 kg [4.7%]), respectively. Fasting insulin, triglyceride, and cytokines to similar levels. But significantly more women with PCOS had insulin resistance (IR) after weight loss than did women without PCOS.

Women with PCOS tended to have higher levels of the inflammatory markers interleukin-6 (IL-6) and tumor necrosis factor-α (TNF-α) after weight loss than did those without PCOS, and none of the women in either group had a reduction in the markers’ levels after weight loss, according to Ms. Moran and her associates (J. Clin. Endocrinol. Metab. 2007;92:2944-51).

The lack of a reduction in those inflammatory markers in all patients was “surprising,” even though the investigators expected a similar response between groups given their comparable reductions in weight and waist circumference.

“The metabolic benefits conferred by weight loss may be contingent on a reduction on a key level of abdominal or visceral adipose fat,” they wrote.

In a post hoc analysis, women who had below-median abdominal fat, “were insulin sensitive and antiatherogenic, and anti-inflammatory properties—and greater reductions in triglycerides after weight loss, regardless of PCOS status,” the researchers wrote. “This suggests that subjects with an adverse inflammatory profile may demonstrate less favorable metabolic improvement with weight loss,” the researchers wrote.

The lack of differences in response to weight loss between the groups could mean that the participants in the study were “not representative of the general population where differences in cardiovascular risk profiles are commonly observed between women with and without PCOS,” they continued. “Thus, even in women with PCOS who displayed an elevated cardiovascular risk profile in association with elevated inflammatory markers, a greater degree of weight loss (more than 5%) may be required to achieve metabolic benefits similar to subjects without PCOS,” they wrote.

The need for greater weight loss in PCOS to reduce inflammatory markers “may be contingent on the elevated commonly observed in PCOS,” the researchers wrote, because PCOS-associated IR is “predominantly associated with postreceptor defects in insulin signaling and is thus metabolically distinct from obesity-associated IR.” It has been suggested that obesity-associated increases in TNF-α and IL-6 reduce adiponectin expression and thus insulin sensitivity; making it possible that “adiponectin, IL-6, and TNF-α may not be involved in the mediation of IR in PCOS.”

On the other hand, IR in women with PCOS “may require a greater reduction in weight, abdominal or visceral adiposity, and androgens to be ameliorated,” the researchers noted.

“It is possible that despite the similar waist circumferences, differences in visceral abdominal fat existed between subjects with and without PCOS. This could account for the differences in fasting insulin and HOMA (homeostatic model assessment) and the differential effect of weight loss on CRP in PCOS in this study,” the investigators wrote. But they thought it more likely that alterations in IR “are primarily responsible for modifying changes in cytokines and adipocytokines with weight loss.”

Both groups of women, all of whom were white, had an average body mass index of about 35 kg/m². The patients were aged in their low- to mid-30s. The investigators noted that besides a lack of a measurement of the ratio between the high- and low-molecular-weight forms of adiponectin, an additional weakness of the trial included not controlling for age and menstrual cycle stage.

Metformin May Help Reduce Acne in Polycystic Ovary Syndrome Patients

By Mary Ellen Schneider
New York Bureau

Toronto — A 6-month treatment regimen of metformin can help reduce the prevalence and degree of acne in women with polycystic ovary syndrome, according to Dr. Susanne Tan and her colleagues.

The researchers treated 100 women with polycystic ovary syndrome (PCOS) and acne papulopustules with a weight-adapted dose of metformin for 6 months. The degree of acne fell from a mean of 1.5 to 0.9 and the prevalence dropped from 100% at baseline to 72% after 6 months of treatment.

The 6-month mean age of the women who participated in the study was 28 years, and they had a mean body mass index of 31.8 kg/m². Dr. Tan of the University Hospital Essen, in Germany, and her colleagues defined PCOS according to the Rotterdam criteria, while degree of acne was rated by the number of lesions per half of the face.

The findings were reported in a poster presentation at the annual meeting of the Endocrine Society.

Women with 1-10 lesions were considered to have grade I acne, those with 11-20 lesions had grade II, and those with 21-30 lesions had grade III. At baseline, 53% of participants had grade I acne, 39% had grade II acne, and 6% had grade III.

Hyperandrogenism and chronic anovulation were assessed at baseline and after 6 months.