

Drug combination promotes weight loss in polycystic ovary syndrome

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Women with polycystic ovary syndrome, or PCOS, lost significantly more weight when they took two drugs that are traditionally used to treat diabetes, rather than either drug alone, a study from Slovenia demonstrates. The results will be presented Monday at The Endocrine Society's 95th Annual Meeting in San Francisco.

PCOS is the leading cause of infertility among women. In the United States, the disorder affects approximately 5 million women, according to the U.S. Department of Health and Human Services Office of Women's Health. This translates to 1 in 10 to 20 women, overall, who are affected. The disease probably is genetic, although the exact causes are still unknown.

In PCOS, the [ovaries](#) produce excessive amounts of [male sex hormones](#), or androgens. The name of the disease derives from small cysts that form on the ovaries, which do not produce enough of the hormone that triggers ovulation. When this occurs, the [ovarian follicles](#), which have filled with fluid in preparation for ovulation, remain as cysts when ovulation fails to take place. In addition to infertility, symptoms include [excessive hair growth](#) in areas that usually are relatively hairless; obesity; menstrual irregularity; thinning or balding hair on the scalp; [prediabetes](#) or diabetes; and anxiety or depression. Weight loss in these women leads to higher chances of conception, improved [pregnancy outcomes](#) and improved [metabolic profile](#).

Treatment varies depending upon the severity of the disease, and

includes [lifestyle modifications](#) and drug therapy. Some of the same medications that are used to treat diabetes also improve PCOS symptoms. One of these medications, [metformin](#), works by regulating the [hormone insulin](#) and by suppressing androgen activity, which, in turn, helps control blood-sugar levels and has beneficial effects on ovarian function. The problem with metformin, however, is that it does not always aid with weight loss.

Because of this, investigators examined different [drug combinations](#) to see which ones caused the most weight loss. In addition to metformin, they administered another diabetes medication called liraglutide, both alone and in combination with metformin, to determine which approach led to the greatest amount of weight loss.

They found that patients who took the combined drugs lost 6.5 kilograms (kg), or about 14 pounds, on average, compared to about 4 kg, or almost 9 pounds, on liraglutide alone, and 1 kg, or about 2 pounds, on metformin alone. Furthermore, 22 percent of participants on the combined treatment lost a significant amount of weight, defined as 5 percent or more of their body weight, compared to 16 percent of those on liraglutide. No one in the metformin group achieved this amount of weight loss. In terms of body-mass index and waist circumference, the combined-treatment group saw greater improvements than either of the single-medication groups. For both of these measurements, liraglutide alone outperformed metformin alone.

"The effect of metformin on weight reduction in polycystic ovary syndrome is often unsatisfactory," said study author Mojca Jensterle Sever, MD, PhD, who served as lead author with Andrej Janez, MD, PhD, a fellow consultant at the University Medical Center in Ljubljana, Slovenia. "Short-term combined treatment with liraglutide and metformin appears better than either metformin or liraglutide alone on weight loss and decrease in waist circumference in obese women with

PCOS who had been previously poor responders regarding weight reduction on metformin alone."

The main side effect was nausea, which occurred more often with liraglutide than with metformin. The nausea did improve with time, however, and was not associated with weight loss.

Study participants comprised 36 women with PCOS who had lost less than 5 percent of their body weight on a six-month course of metformin preceding the study. Their average age was 31 years. Investigators randomly assigned them to one of three treatment groups for the 12-week study, including metformin alone, liraglutide alone, and both medications.

The University Medical Center Ljubljana, Slovenia, funded the study.

Provided by The Endocrine Society

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