

Drug cocktail may treat postmenopausal PCOS complications

1 October 2018

A combination of a diabetes drug and a high blood pressure medication may effectively treat all symptoms of postmenopausal polycystic ovary syndrome (PCOS). The findings will be presented today at the American Physiological Society's (APS) Cardiovascular, Renal and Metabolic Diseases: Sex-Specific Implications for Physiology conference in Knoxville, Tenn.

PCOS is a condition in which a woman has higher-than-normal androgen (male sex hormone) levels. This hormonal imbalance leads to the development of ovarian cysts, as well as a collection of symptoms, including obesity, insulin resistance, [high blood pressure](#) and high cholesterol. These characteristics together are commonly referred to as [metabolic syndrome](#). PCOS can contribute to fertility problems during the reproductive years, and the symptoms of metabolic syndrome often linger throughout a woman's life, even after menopause.

Previous research has shown that liraglutide—a medication used to treat type 2 diabetes—lowers blood pressure in women without PCOS. Whether or not liraglutide lowers blood pressure in postmenopausal women with PCOS is still unknown. However, the drug promotes significant weight loss in childbearing-age women with PCOS. Liraglutide has also been found to reduce [insulin resistance](#) and blood pressure in rat models of reproductive-age PCOS.

Researchers from the University of Mississippi Medical Center studied a rat model of postmenopausal PCOS. The animals received liraglutide alone for three weeks, followed by separate one-week regimens of the renin angiotensin system (RAS) blocker enalapril and a drug cocktail of liraglutide combined with enalapril. Enalapril treats high blood pressure by blocking activation of the RAS, a group of hormones that acts as a main regulator of blood pressure.

The research team found that liraglutide by itself reduced body weight, appetite and cholesterol levels but did not lower blood pressure in the postmenopausal PCOS rats compared to an age-matched control group. Enalapril alone, however, normalized [blood pressure](#) in the PCOS group when compared with the controls. The most comprehensive improvement was seen with the liraglutide and enalapril drug cocktail, which effectively addressed all symptoms. "Our results suggest that RAS blockage in combination with liraglutide could be an effective therapeutic tool to treat all components of [metabolic syndrome] in [postmenopausal PCOS], including hypertension," the researchers wrote.

More information: Edgar D. Torres Fernandez, MD, of the University of Mississippi Medical Center, will present "Interaction between GLP-1 receptor agonists and renin angiotensin system in the metabolic syndrome in a model of postmenopausal PCOS" in a poster session on Monday, October 1, at the Crowne Plaza Knoxville.

Provided by American Physiological Society

APA citation: Drug cocktail may treat postmenopausal PCOS complications (2018, October 1) retrieved 26 June 2019 from <https://medicalxpress.com/news/2018-10-drug-cocktail-postmenopausal-pcos-complications.html>

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