

Managing inflammation through the endothelin system

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Experts in the endothelin system are investigating how regulation of this system can serve to improve diseases of inflammation such as lupus.

Endothelins are a class of peptides that play a role in regulating blood pressure. New research findings will be presented virtually at the Seventeenth International Conference on Endothelin (ET-17), hosted and organized by the American Physiological Society (APS).

Pulmonary Hypertension Medication Improved Inflammation and Metabolic Markers in Lupus Mouse Model

High levels of endothelin 1 in the blood is associated with obesity and insulin resistance. People with the autoimmune disease [systemic lupus erythematosus](#) (SLE), the most common form of lupus, often have elevated endothelin 1. They are also more likely to be obese and to develop type II diabetes than their non-SLE peers.

Researchers at the University of Mississippi Medical Center in Jackson treated a mouse model of SLE with two different kinds of endothelin blockers. Both blockers lowered markers of inflammation and reduced fasting insulin levels compared to controls. One blocker, bosentan, which is already prescribed to humans to regulate pulmonary hypertension, also improved glucose tolerance. These findings are an encouraging sign that endothelin blockers could be beneficial to people with SLE.

Endothelin Blockers Protected Mouse Model from Developing Colitis

University of Alabama at Birmingham researchers explored potential protective effect of endothelin blockers on a [mouse](#) model of colitis. This [model](#) is often used to represent the human inflammatory disorder ulcerative colitis. Mice pretreated with endothelin blockers prior to exposure to an intestinal irritant did not develop colitis, a result more protective than expected. The researchers plan future studies to assess

"the potential of [endothelin blockers] as a therapeutic agent for maintaining remission in colitis."

Vitamin D Showed Protective Effect in Kidney Injury Mouse Model

Researchers at Gadjah Mada University in Indonesia looked at a method of reducing acute and chronic kidney injury, a disease to which endothelin 1 contributes. They treated a [mouse model](#) of acute and chronic kidney injury with calcitriol, an active form of vitamin D. Compared to untreated mice, treated mice showed a reduced serum creatinine level, which is an indication of better kidney function, and a reduction in markers of inflammation and markers of endothelin activity. The researchers concluded that "calcitriol may ameliorate vascular remodeling, inflammation and fibrosis during acute and chronic phases" of kidney injury and that future studies with endothelin blockers to tease out the interaction between vitamin D and [endothelin-1](#) "may provide better understanding in the future."

More information: www.physiology.org/professiona...onf-endothelin?SSO=Y

Provided by American Physiological Society

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