

Endothelin B receptor drug reduces memory loss, oxidative stress in Alzheimer's disease

September 7 2015

An estimated 5.3 million people in the U.S. suffer from Alzheimer's disease (AD)—the most common form of dementia—and roughly 473,000 people will develop the disease in 2015. There are currently five medications approved by the Food and Drug Administration (FDA) to treat AD. However, these drugs only help mask the symptoms and do not stop the disease from progressing or treat the underlying disease. In a new study presented at the 14th International Conference on Endothelin: Physiology, Pathophysiology and Therapeutics, researchers used IRL-1620, a chemical that binds to endothelin B receptors, to treat AD in rats.

Studies have shown that endothelin B receptors are important in brain development. "We used the novel approach of stimulating the endothelin B receptors by [intravenous injection](#) of IRL-1620 to prevent and repair the damage to the brain caused by Alzheimer's disease," said study co-author Seema Briyal, PhD.

Rats with AD showed impaired learning and memory and increased [oxidative stress](#). "We found that treatment with IRL-1620 reversed these effects. Intravenous injection with the drug improved memory deficit by 50 to 60 percent and reduced oxidative stress by 45 to 50 percent," Briyal explained. "We also found that treatment with IRL-1620 enhanced certain recovery processes within the AD-damaged brain, resulting in more new blood vessels and neuronal cells. This indicates reparative processes occurring in the damaged brain."

According to Briyal and her mentor Anil Gulati, PhD, this is the first report to indicate that selective stimulation of the endothelin B receptors by IV injection of IRL-1620 improves memory, reduces oxidative stress and enhances neurovascular remodeling in animal model of Alzheimer's disease. The study was supported by the Alzheimer's Drug Discovery Foundation.

Gulati and Briyal will present "Stimulation of ETB Receptors by IRL-1620 Modulates the Progression of Alzheimer's Disease" at a poster session on Friday, September 4, from 1 to 2:30 PM in Ballroom BCDEF of the Hyatt Regency Savannah.

More information: www.the-aps.org/mm/Conferences...15-Conferences/ET-14

Provided by American Physiological Society

Citation: Endothelin B receptor drug reduces memory loss, oxidative stress in Alzheimer's disease (2015, September 7) retrieved 6 May 2024 from <https://medicalxpress.com/news/2015-09-endothelin-receptor-drug-memory-loss.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
