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News of plaque-clearing drug tops week of major advances against Alzheimer's disease

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In the last eight days, scientists have delivered a powerful one-two punch in the fight to defeat Alzheimer's disease. At the same time, the White House and members of Congress are proposing increases in Alzheimer's research funding. This has been a big week for all who seek to end this disease, says the CEO of the American Health Assistance Foundation.

"In the last eight days, scientists have delivered a powerful one-two punch in the fight to defeat Alzheimer's disease," said Stacy Pagos Haller, President and CEO of the American Health Assistance Foundation (AHAF), a nonprofit that identifies and funds exceptionally high-impact research worldwide through its Alzheimer's Disease Research program.

"We are excited about today's announcement by Case Western University researchers that a cancer drug, used in mice studies, appears to help clear out the excess plaque found in the Alzheimer's-disease brain and it does this by enhancing the body's natural defense mechanisms," noted Haller. "This follows last week's announced discovery of how Alzheimer's disease spreads in the brain. The timing of these findings coincides with new proposals in Congress and the White House to increase federal funding for Alzheimer's research. This has been a big week for all who seek to end this disease."

In a study of mice, a research team headed by Case Western University scientist Gary Landreth, Ph.D., found that bexarotene—a drug currently used to combat T cell lymphoma— helped the body clear out amyloid

beta proteins. Alzheimer's disease arises in large part from the body's inability to clear these naturally occurring proteins. As amyloid beta levels increase they tend to aggregate and contribute to the so-called brain "plaques" found in Alzheimer's disease.

Bexarotene appeared to improve brain function in these mice. Study results were published in the journal *Science*.

"Although this is a mouse study, the results are encouraging, and the drug did its job with unprecedented speed, by targeting ApoE, the primary genetic risk factor for Alzheimer's disease," said AHAF Vice President for Scientific Affairs Guy Eakin, Ph.D.

"This announcement is particularly exciting because bexarotene achieved regulatory approval by the U.S. Food and Drug Administration more than a decade ago for the treatment of cancer. That earlier approval could speed up the prospects for human clinical trials of the drug as an Alzheimer's treatment."

AHAF, which had also supported Landreth earlier in his career, started funding the preliminary work leading to this line of research in 2007. Currently, AHAF is funding follow-up studies in which the Landreth team is testing the latest findings on other "mouse models" that may better represent the human form of Alzheimer's disease. Positive findings could help pave the way towards human clinical studies.

"While it is still too early to make predictions, if these findings can be replicated in additional preclinical studies, and then later in human clinical trials, we may have a powerful new weapon in the battle to halt this disease," noted Eakin.

This latest news comes only one week after an AHAF-funded research team in Boston and another team in New York announced a major

breakthrough in understanding how Alzheimer's disease spreads in the brain. By learning that toxic "tau" proteins jump from nerve cell to nerve cell, scientists can now focus on ways to target and stop this cell-to-cell spread.

Although these reports are coming in rapid succession, the overall progress of Alzheimer's disease research has been slower than that of other major diseases, due in part to comparatively meager financial support for Alzheimer's disease research. "We hope this funding scenario will improve, as promising study results stimulate our national resolve to defeat this disease," said Haller.

This week the Obama Administration announced it will provide an additional $130 million in Alzheimer's research funding over the next two years. Last week a bipartisan group in Congress unveiled the Spending Reductions through Innovations in Therapies (SPRINT) Agenda Act of 2012. The legislation, introduced by Senators Barbara Mikulski (D-MD) and Susan Collins (R-ME) and Representatives Chris Smith (R-NJ) and Ed Markey (D-MA), would spur public and private research funding and streamline the regulatory review of treatments.

More information: www.sciencemag.org/content/ear … 2/08/science.1217697

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