

## Potential remedy for the 'mental fog' in cancer patients

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Cancer patients have complained for years about the mental fog known as chemobrain. Now in animal studies at West Virginia University (WVU), researchers have discovered that injections of N-acetyl cysteine (NAC), an antioxidant, can prevent the memory loss that breast cancer chemotherapy drugs sometimes induce. The WVU researchers' study has just been published in the September issue of the Springer journal *Metabolic Brain Disease*.

Rats were given the commonly used chemotherapy drugs adriamycin and cyclophosphamide. When on the drugs, rats who were trained to prefer a light room to a dark room forgot their training.

"When animals are treated with chemotherapy drugs, they lose memory," said Gregory Konat, Ph.D., professor of neurobiology and anatomy at WVU. "When we add NAC during treatment, they don't lose memory."

Chosen for its antioxidant properties, NAC is a modified form of the dietary amino acid cysteine.

Jame Abraham, M.D., director of the Comprehensive Breast Cancer Program at WVU's Mary Babb Randolph Cancer Center, said as "chemobrain" entered the national lexicon, many patients expressed frustration about doctors not taking the complaints seriously.

"In the past, there was a lot of ignorance among doctors about chemo-induced cognitive problems," Dr. Abraham said. "In some patients,

problems can persist for up to two years."

The WVU authors say as many as 40 percent of cancer patients undergoing chemotherapy complain of symptoms such as severe memory and attention deficits. Previously, scientists suspected the cancer, rather than chemo drugs, might be the cause.

Earlier this year, Dr. Abraham's team of researchers used MRI scans to document the extent of changes to the brain in women who received chemotherapy for breast cancer. Now the connection between drugs and memory loss is clear, and a potential remedy is suggested as well.

"At this point, we have no evidence to say that NAC is safe in patients who are getting chemotherapy," Abraham said. "We need more studies to confirm the role of NAC in patients."

Source: Springer

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