Study Shows First Practical Intervention For Chemobrain

SAN FRANCISCO, CA (October 31, 2016) – For the first time, symptoms of cancer-related cognitive decline – often called “chemobrain” – were reversed in a large, home-based, randomized controlled trial, using unique computerized brain exercises, according to a report today in the Journal of Clinical Oncology.

Breast cancer support groups first brought attention to a phenomenon they called “chemobrain” or “chemofog” in the 1980s, and its seriousness and very existence were questioned by many in the medical profession. Studies on the condition did not begin until the late 1990s, and there continues to be controversy over its causes.

Despite studies indicating that up to 70 percent of patients treated with chemotherapy experience cognitive decline; that such symptoms can persist for 10 or more years; and that the effects can interfere with maintaining employment, relationships and day-to-day independence; there are no broadly accepted treatments for cancer-related cognitive impairment. Millions of patients are treated with chemotherapy each year, and there are more than 35 million people with 5 or more years of cancer survival, worldwide.

Researchers from the Survivorship Research Group, University of Sydney, Australia conducted a randomized controlled trial among 242 cancer survivors, who reported cognitive problems 6-60 months after completing chemotherapy.

All study participants received a phone consultation. Half were assigned to the control group and received standard care from their healthcare providers, and the other half received standard care plus were asked to engage in a home-based intervention of online brain exercises for a total of 40 hours (40 minutes, 4 times per week, for 15 weeks). The exercises used in the study were a suite of five visual speed of processing exercises that are part of BrainHQ, a commercially-available, online, brain-training subscription service.

Researchers administered this home-based study remotely, using a standard self-report cognitive assessment (FACT-COG), with the Perceived Cognitive Impairment (PCI) subscale designated as the primary outcome measure. Secondary endpoints included standard self-report assessments of stress (PSS); fatigue (FACT-F); anxiety/depression (GHQ); quality of life (QOL FACT-G); and an online self-administered neuropsychological test (Cogstate). Participants were assessed at baseline, after the 15-week intervention, and six months later.

Researchers reported that the intervention group, as compared to the control group, reported significantly better Perceived Cognitive Impairment (the primary outcome measure: FACT-COG PCI) immediately after the intervention (p<0.0001), and six months later (p<0.0002).
The intervention group also had significantly better performance on many secondary measures, including: on the stress measure after intervention and at six months; fatigue and anxiety/depression measures after training and with a trend to better performance at six months; on the quality of life measure at six months, but not immediately after training; and on all FACT-COG subscales after intervention, but only on some at six months. The computerized neuropsychological assessment (Cogstate) showed no between group difference after training or six months later.

“The use of this web-based intervention led to improvements in cognitive symptoms that were sustained six months later,” said Dr. Janette Vardy of the University of Sydney, the senior author on the paper. “While this builds on prior work, to our knowledge, it is the largest trial showing improvement in cognitive symptoms among cancer survivors after chemotherapy.”

“This is an important step forward,” commented Dr. Diane Von Ah of Indiana University, who ran a prior study using the same intervention, with similar results, in a classroom setting. “This new study suggests that this program can be used successfully in the home to address a serious problem that has too often been ignored, trivialized, or even denied to exist.”

“We are excited by the addition of these independent research results to our body of knowledge,” said Dr. Henry Mahncke, CEO of Posit Science, the maker of the BrainHQ exercises used in this intervention. “We plan to approach appropriate regulatory agencies to explore the shortest path to getting a form of these exercises into the hands of patients who may be helped.”

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