Anti-inflammatory drugs do not improve cognitive function in older adults

The anti-inflammatory drugs naproxen and celecoxib do not appear to improve cognitive function in older adults with a family history of Alzheimer's disease, and naproxen may have a slightly detrimental effect, according to an article posted online today that will appear in the July 2008 print issue of *Archives of Neurology*.

Inflammatory processes may play a role in Alzheimer's disease and other neurodegenerative disorders, as well as in the decline of cognitive (thinking, learning and memory) function in older adults, according to background information in the article. "Consistent with this hypothesis, observational studies have shown an association between the use of non-steroidal anti-inflammatory drugs (NSAIDs) and a lower risk of Alzheimer's disease," the authors write.

The ADAPT (Alzheimer's Disease Anti-Inflammatory Prevention Trial) Research Group conducted a randomized clinical trial involving 2,117 individuals age 70 and older with a family history of Alzheimer's disease. From March 2001 to December 2004, 617 took 200 milligrams of the NSAID celecoxib twice daily, 596 took 220 milligrams of naproxen sodium twice daily and 904 took placebo. Each year, the study participants took seven tests assessing cognitive function that were added into one global summary score. Treatments were halted in December 2004 because another study found increased cardiovascular risks associated with celecoxib.

"The ADAPT cognitive function results through six months after study treatment cessation do not show a protective effect with the use of NSAIDs and may suggest that cognitive scores are lower," the authors write. "The global summary scores, which combine the results from seven individual tests in the cognitive assessment battery, were significantly lower over time for naproxen, but not for celecoxib, compared with placebo."

There are several explanations for the difference between these findings and those of previous observational trials, the authors note. Because observational trials do not assign participants to treatment groups but analyze existing behavior, additional factors that were not measured may have confounded or affected the results. In addition, the findings of this trial may apply only to celecoxib and naproxen and not to other anti-inflammatories, such as ibuprofen. Finally, NSAIDs may be protective only when given several years before the time when cognitive function would have begun to decline.

"Continued follow-up of trial participants, even after cessation of treatment, appears warranted to investigate treatment effects with respect to the timing of exposure," the authors write. "However, for now we suggest that naproxen and celecoxib should not be used for the prevention of Alzheimer's disease."

Source: JAMA and Archives Journals