Abstract

The herbal product Ginkgo biloba is taken frequently with the intention of improving cognitive health in aging. However, evidence from adequately powered clinical trials is lacking regarding its effect on long-term cognitive functioning.

OBJECTIVE: To determine whether G. biloba slows the rates of global or domain-specific cognitive decline in older adults.

DESIGN, SETTING, AND PARTICIPANTS: The Ginkgo Evaluation of Memory (GEM) study, a randomized, double-blind, placebo-controlled clinical trial of 3069 community-dwelling participants aged 72 to 96 years, conducted in 6 academic medical centers in the United States between 2000 and 2008, with a median follow-up of 6.1 years.

INTERVENTION: Twice-daily dose of 120-mg extract of G. biloba (n = 1545) or identical-appearing placebo (n = 1524).

MAIN OUTCOME MEASURES: Rates of change over time in the Modified Mini-Mental State Examination (3MSE), in the cognitive subscale of the Alzheimer Disease Assessment Scale (ADAS-Cog), and in neuropsychological domains of memory, attention, visual-spatial construction, language, and executive functions, based on sums of z scores of individual tests.

RESULTS: Annual rates of decline in z scores did not differ between G. biloba and placebo groups in any domains, including memory (0.043; 95% confidence interval [CI], 0.034-0.051 vs 0.041; 95% CI, 0.032-0.050), attention (0.043; 95% CI, 0.037-0.050 vs 0.048; 95% CI, 0.041-0.054), visuospatial abilities (0.107; 95% CI, 0.097-0.117 vs 0.118; 95% CI, 0.108-0.128), language (0.045; 95% CI, 0.037-0.054 vs 0.041; 95% CI, 0.033-0.048), and executive functions (0.092; 95% CI, 0.086-0.099 vs 0.089; 95% CI, 0.082-0.096). For the 3MSE and ADAS-Cog, rates of change varied by baseline cognitive status (mild cognitive impairment), but there were no differences in rates of change between treatment groups (for 3MSE, P = .71; for ADAS-Cog, P = .97). There was no significant effect modification of treatment on rate of decline by age, sex, race, education, APOE*E4 allele, or baseline mild cognitive impairment (P > .05).
CONCLUSION: Compared with placebo, the use of G. biloba, 120 mg twice daily, did not result in less cognitive decline in older adults with normal cognition or with mild cognitive impairment.

TRIAL REGISTRATION: clinicaltrials.gov Identifier: NCT00010803.

Comment in Ginkgo biloba and cognitive decline. [JAMA. 2010]