



Drug Monitor

Does Donepezil Boost Benefits of Cognitive Training?

Studies have found that acetylcholinesterase inhibitors (AChIs) and cognitive training programs both can improve memory function in adults without dementia. But can taking an AChI enhance the effectiveness of cognitive training?

To find out, researchers from Palo Alto VA Health Care System, Palo Alto, CA and Stanford University School of Medicine, Stanford, CA performed a randomized, double-blind study with a group of 168 community-living adults between the ages of 55 and 90 who had memory complaints but no dementia. Over the course of one year, 83 of these participants received the AChI donepezil—with all doses starting at 5 mg/day and most increasing to 10 mg/day—and 85 of them received placebo. In addition, all participants took part in two-hour cognitive training sessions, which focused on techniques for remembering lists and connecting names with faces, on Mondays through Fridays during weeks 13 and 14.

The researchers tested participants' memory at baseline, 12 weeks into pharmacologic treatment but before the cognitive training, after completion of the cognitive training, and at the end of the study. They focused primarily on how test performances were affected by donepezil, but they also looked for correlations between improved performance and such factors as participants' demographic data (age and educational level), baseline cognitive measures, and apolipoprotein (APOE) genotype status.

Although participants performed better on the memory tests after their

cognitive training, the researchers found that “there were no significant effects associated with donepezil treatment at any measurement point either alone or as an augmentation of the effects of cognitive training.” In addition, participants' treatment responses did not appear related to demographics, baseline cognitive measures, or APOE genotype status. And when the researchers studied an additional cohort of 30 participants to investigate whether adjusting donepezil doses would improve testing results, they found that it did not.

The researchers conclude that, at present, “the use of donepezil as an augmentation of memory in nondemented populations is not warranted.” The drug's lack of effect over the long term, they say, could be related to physiologic tolerance and increased acetylcholinesterase levels. They also cite a study arguing that chronic, around-the-clock dosing can interfere with memory consolidation by affecting sleep and other parameters; the authors of that study suggested trying AChIs that have a shorter half-life than donepezil.

Source: *J Gerontol B Psychol Sci Soc Sci.* 2008;63(5):P288–P294.

Adenosine for ED Tachycardia

For appropriate patients, adenosine is “probably the best available drug to treat paroxysmal supraventricular tachycardias,” say researchers from Ospedale San Paolo, Savona and Azienda Ospedaliera San Martino, Genova, both in Italy.

They performed a retrospective study of all patients who were given adenosine for supraventricular tachy-

cardia in an emergency department (ED) between 2002 and 2006. The goal was to evaluate adenosine's success at reversing tachycardia and its adverse effects in these patients.

A total of 454 patients, with a mean age of 47 years, received the treatment during the study period. Of these patients, 331 (73%) responded to an initial, 6-mg dose of adenosine; 68 (15%) responded to a second, 12-mg dose of the drug; and five (1%) responded to a third, 12-mg dose. The remaining 50 patients (11%) did not respond to adenosine and were given different treatments, including other drugs and electrical cardioversion.

Although most patients experienced minor adverse effects—such as chest tightness, flushing, shortness of breath, headache, nausea, and sense of impending death—from adenosine, only one experienced a serious adverse event. A 57-year-old woman's ventricular rate accelerated markedly after her second adenosine dose, but she recovered spontaneously after 30 seconds. This patient had an undiagnosed atrial flutter, and the adenosine caused an evolution in her atrioventricular conduction.

Overall, the researchers say, these results confirm that adenosine is effective and rarely causes serious adverse effects. They say that, while verapamil is a cheaper alternative to adenosine, it takes a longer time to reversion and is contraindicated in a number of clinical situations that are common in an ED. The researchers note that providers should use caution and have resuscitation equipment ready when administering adenosine for diagnostic purposes to patients with atrial flutter. ●

Source: *Am J Emerg Med.* 26(8):879–882. doi:10.1016/j.ajem.2007.11.029.