

Seizures May Present as Subtle Cognitive Changes

BY DOUG BRUNK
San Diego Bureau

SAN DIEGO — Seizures in elderly patients may present as subtle changes or unexplained fluctuations in cognitive abilities, results from a small study demonstrated.

The finding suggests that physicians “need to consider subtle or subclinical seizures in the differential diagnosis of cognitive deficits in the elderly,” researchers led by Dr. Eliot A. Licht wrote in a poster presented at the annual meeting of the American Neuropsychiatric Association. “Epilepsy is a potentially reversible cause of dementia.”

In an interview, Dr. Licht, of the department of neurology at the Veterans Affairs (VA) Greater Los Angeles Healthcare System, said the finding “introduces another possible treatment intervention for patients who might otherwise be receiving

standard cholinesterase inhibitor therapy.”

Over a period of 6 months, he and his associates identified six patients aged 64-83 years who presented to the VA’s memory disorders program for an evaluation of dementia. All patients underwent clinical examinations for seizure activity and received standard awake and drowsy electroencephalograms (EEGs). One of the six was known to have epilepsy.

EEGs showed recurrent epileptiform activity in all six patients. “This is not to

say that in every case the epileptiform activity was causing all of their cognitive deficits, but it’s possible that it was contributing to it,” Dr. Licht said.

Risk factors for seizures included stroke or ischemic changes, history of tumor, and history of electroconvulsive therapy.

In their poster, the researchers discussed the case of one patient who was admitted for dementia with aggressive behavior, but who did not show clinical seizures at that time. “Following add-on therapy with

valproic acid, his epileptiform activity ended and his [Mini Mental State Examination] score of 20/30 improved to 30/30,” they wrote.

“Sometimes you may need to do more than one study to get an idea of what’s going on in terms of the fluctuations,” Dr. Licht said. “That is, on day 1 someone may come in and have a small amount of activity that’s not too common. But on day 10 [the activity] may be much more common.” ■

Supplements of Benefit to Only Some Elderly

Protein and energy supplementation can increase survival and reduce complications for hospitalized elderly patients who are undernourished at admission, but there is little or no evidence that it helps well-nourished patients who are hospitalized or older people who live in other settings, according to a review of 55 randomized controlled trials.

“Although the evidence is limited and generally of poor quality, we suggest that routine supplements should be considered” for undernourished elderly patients in the hospital, said Anne C. Milne, research fellow at the University of Aberdeen, Scotland, and her colleagues.

They used the methods of the international Cochrane Collaboration, an organization that evaluates medical research and draws evidence-based conclusions about medical practice, to conduct a meta-analysis of randomized or “quasirandomized trials” of oral protein and energy supplementation lasting at least 1 week in people older than 65 years. Supplementation included various commercial nutritional supplements, milk-based supplements, and fortification of normal food sources, but not special immunomodulatory supplements or supplements of specific amino acids.

The effects of supplementation on mortality and morbidity were statistically significant only in hospitalized patients who were deemed undernourished—and even then, the results were “borderline statistically significant,” the investigators said. Hospital stay was not reduced in patients who received supplements.

Supplementation may improve mortality in older patients in long-term care, but there’s no evidence to suggest improvement in mortality and morbidity for older people at home or well-nourished older patients in any setting, they said (*Ann. Intern. Med.* 2006;144:37-48).

—Christine Kilgore

CRITICAL INSIGHTS INTO THE NATURE OF NICOTINE ADDICTION

A SUMMARY OF KEY LEARNINGS TO DATE

With all the public awareness efforts that have been made, and with all the truths that have come to light over the last several decades about the dangers of smoking, one obvious question lingers: **Why are people still smoking?**

Understanding nicotine addiction

Most experts agree at this point that smoking is a chronic, relapsing condition—an addiction similar in nature to that seen in cocaine and heroin users.^{1,2} Following are 4 criteria the Surgeon General has used to define addiction, along with an explanation of how nicotine—specifically smoking—meets these criteria.²

1. Addiction leads to compulsive use, despite adverse consequences

According to a 1988 Surgeon General’s report, “highly controlled or compulsive use indicates that drug-seeking and drug-taking behavior is driven by strong, often irresistible urges. It can persist despite a desire to quit or even repeated attempts to quit.”² Smoking statistics show that approximately **70% of current smokers report that they want to quit**; however, only about 5% of smokers who try to quit without medical aid succeed.^{3,4} For those who finally do quit, it is usually only after **6 to 9 failed attempts**.⁵ It is common for people to continue smoking despite known negative health consequences. In fact, smoking behavior often persists even after the presentation of comorbid conditions.^{2,6,7}

2. Addiction involves a psychoactive substance with reinforcing properties

The psychoactive (mood-altering) properties of nicotine are substantially related to its effect on the mesolimbic dopaminergic system. For delivery of nicotine, smoking is the most efficient mechanism. In a matter of seconds, nicotine from inhaled smoke crosses the blood-brain barrier and begins altering brain chemistry through binding to

cholinergic receptors normally activated by acetylcholine. Dopamine is released in the nucleus accumbens, triggering central nervous system effects such as pleasure, relief of anxiety, better task performance, and improved memory. These rewards serve to reinforce smoking behavior.^{2,8-10}

Complicating this effect is that the routines associated with smoking, such as smoking in social environments, can also come to be reinforced through the pleasure response. Eventually, the pleasure associated with smoking in these settings acts as a subconscious trigger, making it hard for the smoker to dissociate the behavior from the addiction. **This explains why successful quit attempts often require some degree of behavioral modification.**^{2,11,12}

3. The addicted subject develops tolerance

Nicotine initiates its action by competitively binding at the nicotinic acetylcholine receptors (nAChRs), ligand-gated ion channels on the cell membrane. Compared with the endogenous agonist acetylcholine, nicotine causes a prolonged activation of nAChRs. The activation is followed by a desensitized state in which the receptors are unresponsive to agonists. This process has been compared to tripping a circuit breaker.^{10,11,13}

Chronic use of nicotine leads to chronic desensitization of nAChRs. As more nicotine is consumed, and more receptors become desensitized, **the user experiences a diminished pleasure effect with each subsequent cigarette smoked.** As the response decreases, increasing levels of nicotine are required to achieve a consistent, desired effect.^{2,10-12} These are defining characteristics of tolerance.¹⁴

