Brief Behavioral Training Improves Insomnia

BY ROBERT FINN
San Francisco Bureau

Insomnia is highly prevalent among elderly patients, but a new study suggests that a brief behavioral treatment can significantly improve insomnia in this population.

In a pilot study, Anne Germain, Ph.D., and her colleagues at the University of Pittsburgh demonstrated that a 45-minute training session followed 2 weeks later by a 30-minute booster session significantly improved scores on the Pittsburgh Sleep Quality Index (PSQI), decreased the time it took to fall asleep, and decreased the amount of wake time after sleep onset (J. Clin. Sleep Med. 2006;2:403-6).

The behavioral training was delivered by a master's-level adult psychiatric and primary-care nurse practitioner who had been trained in the technique. But in an interview, Dr. Germain said, "I think we can train any health care worker at this point to deliver the intervention." She specifically mentioned clinical nurse assistants.

The 35 participants in the study lived in the community, but Dr. Germain said the technique would also be applicable in nursing homes, assisted living centers, and even hospices.

The participants, whose average age was 70 years, were randomized to receive either the brief behavioral treatment or an "information-only control:" brochures published by the American Academy of Sleep Medicine on insomnia, sleep and aging, and sleep hygiene. This was intended to emulate the type of behavioral instructions most primary-care patients might receive.

In the initial treatment session, study participants were given four individually tailored instructions. They were told to reduce the time spent in bed to closely match their number of hours of sleep, to get up at the same time every day of the week, not to go to bed unless they were sleepy, and not to stay in bed unless they were asleep.

Several of these instructions get at the notion of "sleep restriction," which Dr. Germain explained this way: "A lot of people with insomnia tend to increase the amount of time they spend in bed, hoping to catch up on their sleep. They hope that if they stay in bed longer maybe they're going to sleep longer. This typically feeds back into the insomnia by conditioning the body and the brain that the bed is no longer a place only to sleep, but also to be awake."

The technique, a 45-minute training session plus a 30-minute booster 2 weeks later, could work in nursing homes, assisted living centers, and hospices.

Allowing the patients to be in their beds only when they are actually asleep conditions them to associate the bed with sleep and not with reading, thinking, watching television, or other activities, she said.

At the booster session, the sleep schedules were modified if necessary. For example, if patients were falling asleep in less than 30 minutes and were waking up during the night for less than 30 minutes, they were told to increase their time in bed by 15 minutes, and to maintain that new time in bed for 1 week.

If after that week they were still falling asleep in less than 30 minutes and waking up during the night for less than 30 minutes, they were allowed to increase their time in bed by another 15 minutes.

In contrast, if it took them longer than 30 minutes to fall asleep or they awoke during the night for more than 30 minutes, they were instructed to decrease their time in bed by 15 minutes.

Twelve (71%) of the 17 participants who received the behavioral treatment met the study criteria for response, and 9 (53%) also met the criteria for remission. Among the patients in the control group, 6 of 18 (33%) met the criteria for response, and 3 (17%) met criteria for remission.

On average, patients receiving the behavioral treatment lost about four points on the Pittsburgh Sleep Quality Index, while scores among the control patients remained unchanged.

Average sleep latency (the time it takes to fall asleep) fell from 38 minutes to 17 minutes among the patients in the treatment group, and from 30 minutes to 27 minutes among the control patients. The number of minutes of wakefulness after sleep onset fell from 61 minutes to 28 minutes among the treated patients, and from 48 minutes to 36 minutes among the control patients.

All three of these differences between treated and control patients were statistically significant.

On the other hand, there were no statistically significant differences in total sleep time, but this may have been an artifact of the sleep-restriction aspect of the behavioral treatment as well as the relatively short length of follow-up in this pilot study—just 4 weeks after the initial treatment and 2 weeks after the booster session, she noted.

"We didn't have enough time to verify whether or not in the long run we do increase people's total sleep time," Dr. Germain said.

"When we start looking at the longer-term data that is collected in those same patients, only then will we be able to determine whether or not the intervention was effective at changing total sleep time. At 4 weeks I think it's just too short, and it's really a reflection of the artifact that is imposed by the sleep restriction," she told this newspaper.

Dr. Germain said institutions might have to be willing to make some modification such as allowing individualized lights-out for specific residents.

They also might need to provide quiet activities for residents who need to stay up late or get up early (because of their sleep-restriction regimen) so they do not disturb anyone else. ■

More Data Show Positive Effects of Aspirin on Brain Matter

BY AMY ROTHMAN SCHONFELD
Contributing Writer

ATLANTA — Aspirin, even at low doses, appears to prevent age-related declines in gray and white matter integrity in brain regions that typically show the earliest neuropathological changes associated with Alzheimer's disease, according to Lee Ryan, Ph.D., who is with the departments of psychology and neuroscience of the University of Arizona at Tucson.

Dr. Ryan presented her findings on the impact of aspiring on brain function at the annual meeting of the Society for Neuroscience.

These results, which were generated with the use of diffusion-weighted MRI, provide visual evidence that aspirin has a neuroprotective effect on the normal brain.

In addition, the results support previous epidemiologic evidence showing that long-term use of NSAIDs, including aspirin, decreases the risk of developing Alzheimer's disease (AD).

Study participants included 23 cognitively healthy older (over 60 years) adults who were taking aspirin as a health precaution against vascular accidents, hypertension, or mild arthritic symptoms.

Most of the people in this group took the equivalent of one baby aspirin a day (81 mg) for up to 15 years. The control group consisted of 25 age-matched subjects not taking any NSAIDs.

Diffusion-weighted (DW) MRI scans were carried out on a 3-T scanner using a radial fast spin-echo method.

Most of the people in the study group took the equivalent of one baby aspirin a day for up to 15 years.

DR. RYAN

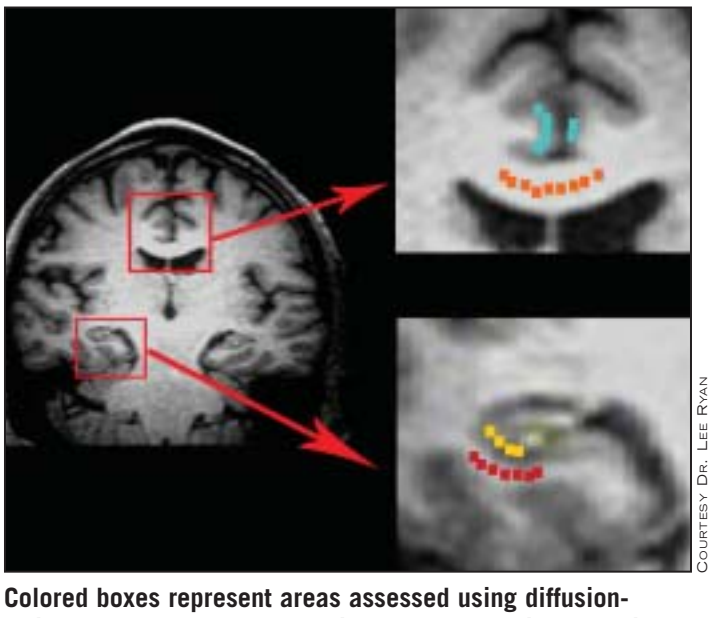
DW-MRI is thought to be "exquisitely" sensitive to the presence of inflammation and other neuropathologic processes in white and gray matter, Dr. Ryan said.

The investigator analyzed four brain regions of interest: the medial temporal lobe and adjacent hippocampal white matter and the posterior cingulate and adjacent white matter in the splenium.

With DW-MRI, lower apparent diffusion coefficient (ADC) values in gray matter and higher fractional anisotropy (FA) values in white matter, compared with controls, are thought to reflect preservation of brain integrity.

Dr. Ryan found that aspirin users had significantly lower hippocampal mean ADC values and higher mean FA values in the adjacent white matter region than did controls.

According to Dr. Ryan, about 25% of both groups were positive for apolipoprotein E (ApoE), and similar protective effects from aspirin were found in individuals regardless of their ApoE status. ADC values were not significantly different between groups in the posterior cingulate.



COURTESY DR. LEE RYAN

Colored boxes represent areas assessed using diffusion-weighted MRI scans to determine the preservation of brain integrity in one subject. The DW-MRI scans were carried out on a 3-T scanner using a radial fast spin-echo method.

However, the use of aspirin did appear to prevent age-related functional changes in the posterior cingulate and splenium that were seen in those who did not take aspirin.

"We can't say anything about the mechanism of why diffusion is changing, but our data support the idea that aspirin, even at low doses, may confer some positive effect on brain function," Dr. Ryan said.

"Diffusion MRI may be a sensitive measure for assessing the influence of anti-inflammatory drugs and interventions that might decrease the risk of Alzheimer's disease," Dr. Ryan said. ■