

Diagnosing Alzheimer's Disease: Media Focus on PET Study

Several weeks ago, newspaper headlines across the country declared that scientists have a new tool for diagnosing early Alzheimer's disease: PET scans. Although the news reports were somewhat sensationalized, the research finding is promising. In a study published in the March 21 *New England Journal of Medicine*, researchers found that PET could detect reduced glucose metabolism in patients who are at extremely high risk of developing Alzheimer's but who have not yet developed the clinical symptoms which include memory loss and personality changes.

The patients in the study who were homozygous for the E4 allele of the apolipoprotein E gene (ApoE4), "which means they are almost certain to develop Alzheimer's," said study leader Eric Reiman, MD, a psychiatrist at Good Samaritan Regional Medical Center in Phoenix, Arizona. Reiman and his colleagues from the Mayo Clinic in Rochester, MN, Arizona State University in Tempe, and the University of Michigan in Ann Arbor performed PET scans

on 33 volunteers between the ages of 50 and 62 and found small reductions in glucose metabolism in the brains of those with two ApoE4 alleles when compared to the controls who have no ApoE4 alleles. Reduced rates of glucose metabolism were found in the posterior cingulate, parietal, temporal and prefrontal regions, the same areas that usually are affected in Alzheimer's patients.

"This study capitalized on the use of image analysis software with improved power to characterize subtle changes in local brain function," said Reiman. "This software permitted us to generate a statistical map of the metabolic differences between 11 healthy people with two copies of the ApoE4 gene (ascertained through a blood test) to 22 healthy people with no copies of the gene." "For now, PET can't predict for sure whether particular individuals will go on to develop Alzheimer's symptoms," said Reiman. "It can't predict when they might go on to develop symptoms, and it can't tell them what might be done to reduce their risk." He believes the potential use for PET lies in evaluating promising treatments for preclinical Alzheimer's disease, including anti-inflammatory drugs, estrogen replacement therapy and other drugs that are being developed.

For now, Reiman and his colleagues will follow the study participants for several years to confirm that PET detected the early stages of Alzheimer's disease. "If, as we predict, the PET abnormalities become more pronounced over the next few years, we will be able to test promising ways to prevent the disorder without having to wait a generation to find out whether or when those at risk go on to develop symptoms." ■

Low-Level Waste: Good News for Possible Texas Site

A proposed low level-radioactive waste disposal facility to be built in Texas near Sierra Blanca is one step closer to approval. In April, an environmental and safety analysis released by the Texas Natural Resource Conservation Commission (TNRCC) indicates that the project satisfies state requirements for licensing. A draft license was also issued. The proposed site plan will now undergo the public review process with a published request for comments of the safety analysis. Copies of the environmental and safety analysis and draft license are available from TNRCC; contact Terry Hadley at (512) 239-5000. ■

OVERHEARD |

"Everyone wants to develop [practice] guidelines." But when it comes time to implement them, the physician's response is often, "Oh, you mean me? I'll help write it, but I really don't need to follow it."

—Gregory Angstman, MD, medical director of the Mayo Clinic's Practice Guidelines Development and Measurement Program at a recent conference on health care quality in San Francisco

In its initial attempts to tackle FDA reform, the Senate introduced a bill in March that would force the FDA to approve within 6 months all new drug applications and to approve within 120 days drugs to treat life-threatening illnesses. If the FDA failed to meet these goals by mid-1998, it would be required to contract out new applications. In addition, products approved in Europe would be allowed on the market unless the FDA could show the product was unsafe or ineffective.

—*Science* (March 1, 1996)

More than half of this year's medical school graduates have chosen primary care medicine as their match choice. This year's results from the matching program showed sharp declines in the number of medical school seniors

entering most specialties, particularly diagnostic radiology and pathology.

—*Journal of the American Medical Association (JAMA, March, 1996)*

Capturing 10 x-ray images each second, a device known as an ultrafast CT scanner enables radiologists to identify coronary artery blockages with 95% accuracy. The scans correctly predict coronary artery disease in 90% of patients with a single blocked artery and in 97% of patients with multiple blocked arteries.

—*Circulation* (March, 1996)

While a spate of studies tout the possible beneficial effects of low levels of radiation, the French Academy of Sciences finds itself fighting the French government against the adoption of the 1990 recommendations of the International Commission on Radiological Protection (ICRP) calling for the lowering of legal radiation limits. The ICRP recommends lowering public exposure from the present limit level of 5 mSv/yr to 1 mSv/yr. Even if the French Academy wins its fight, it is likely that the European Union will adopt the ICRP recommendations.

—*Nuclear News* (January, 1996)